

KIC 012217824

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})
012217824-01	OBS	No	0.914365	131.870888	46.6	4.869	7.6	8.2	0.86	5889	0.59	2426.07
012217824-03	OBS	No	224.968674	315.236159	725.2	10.358	8.7	8.3	0.86	5889	2.68	1.57

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
012217824-01	OBS	FP	0.00	1	0	1	0	LPP_DV—CENT_RESOLVED_OFFSET
012217824-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

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

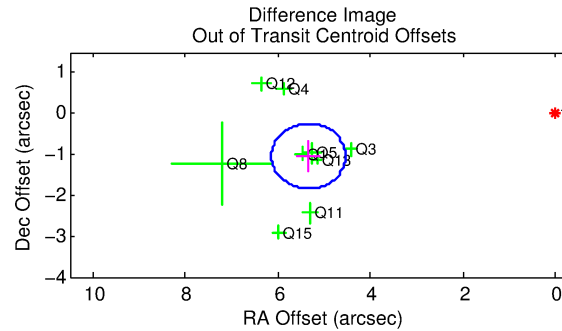
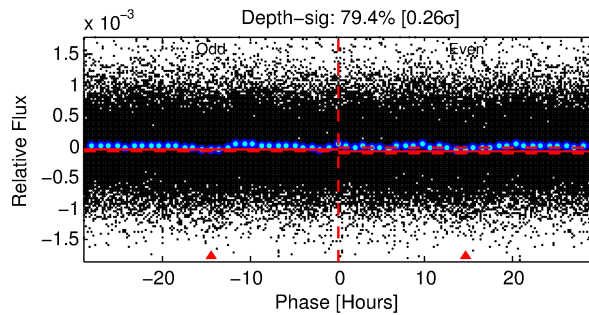
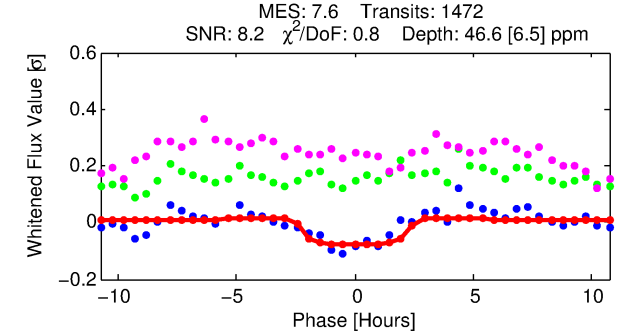
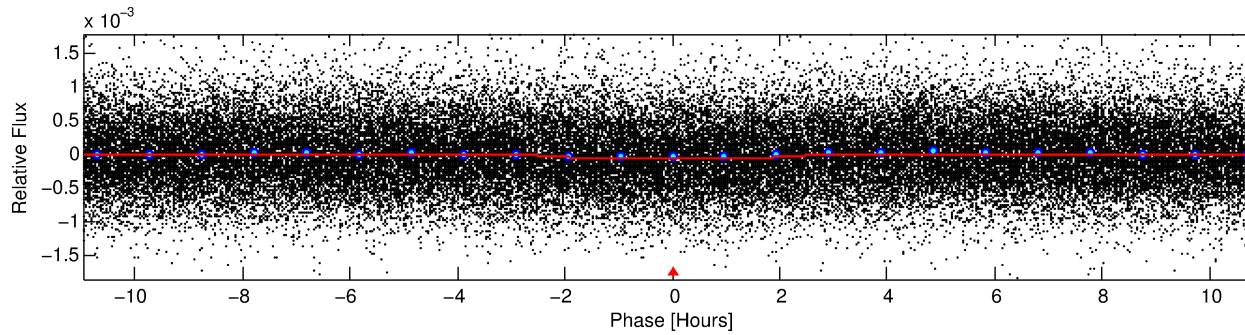
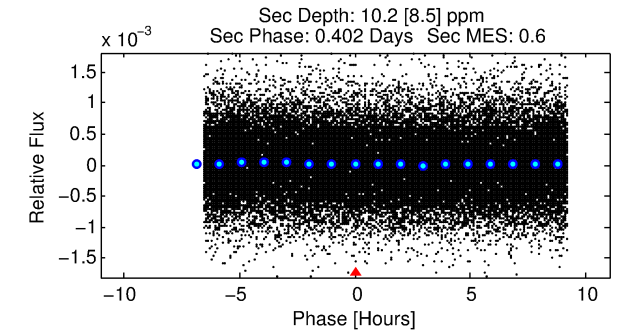
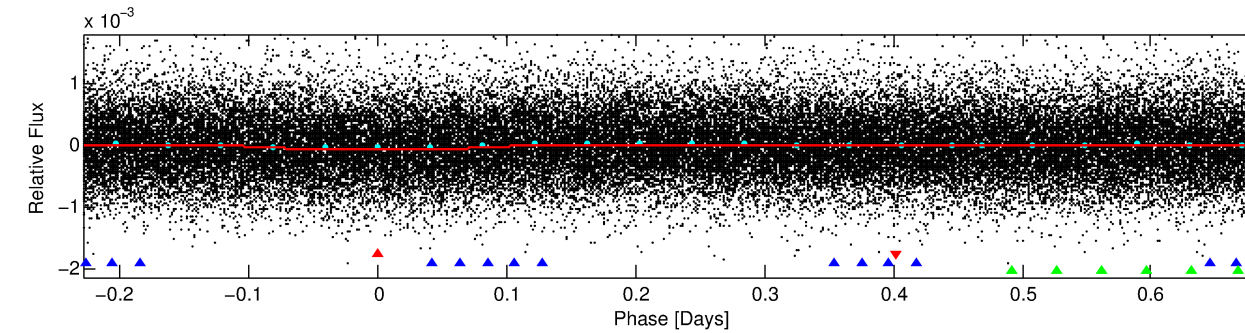
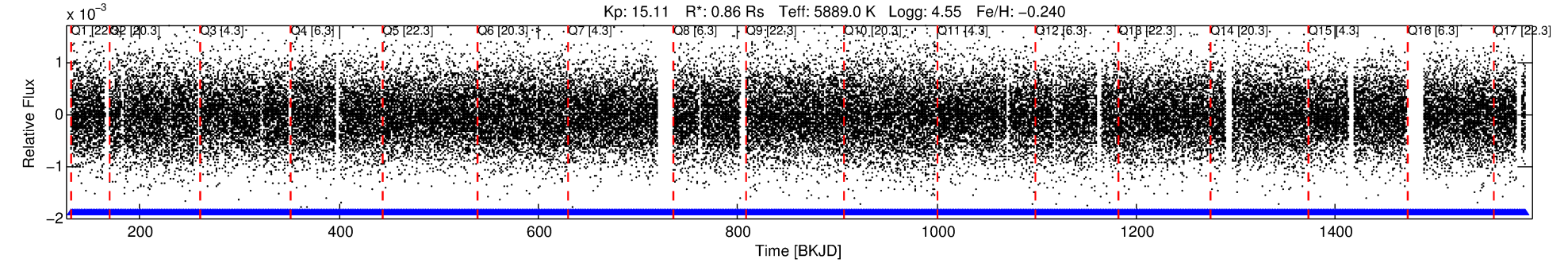
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 012217824-01

No Significant Match Found

DV One-Page Summary

KIC: 12217824 Candidate: 1 of 3 Period: 0.914 d



DV Fit Results:

Period = 0.91436 [0.00001] d
Epoch = 131.8709 [0.0059] BKJD
Rp/R* = 0.0063 [0.0076]
a/R* = 1.52 [4.92]
b = 0.32 [16.44]
Seff = 2426.07 [935.84]
Teq = 1790 [173] K
Rp = 0.59 [0.74] Re
a = 0.0181 [0.0045] AU
Ag = 5.30 [13.74] [0.31σ]
Teffp = 4198 [2697] K [0.89σ]

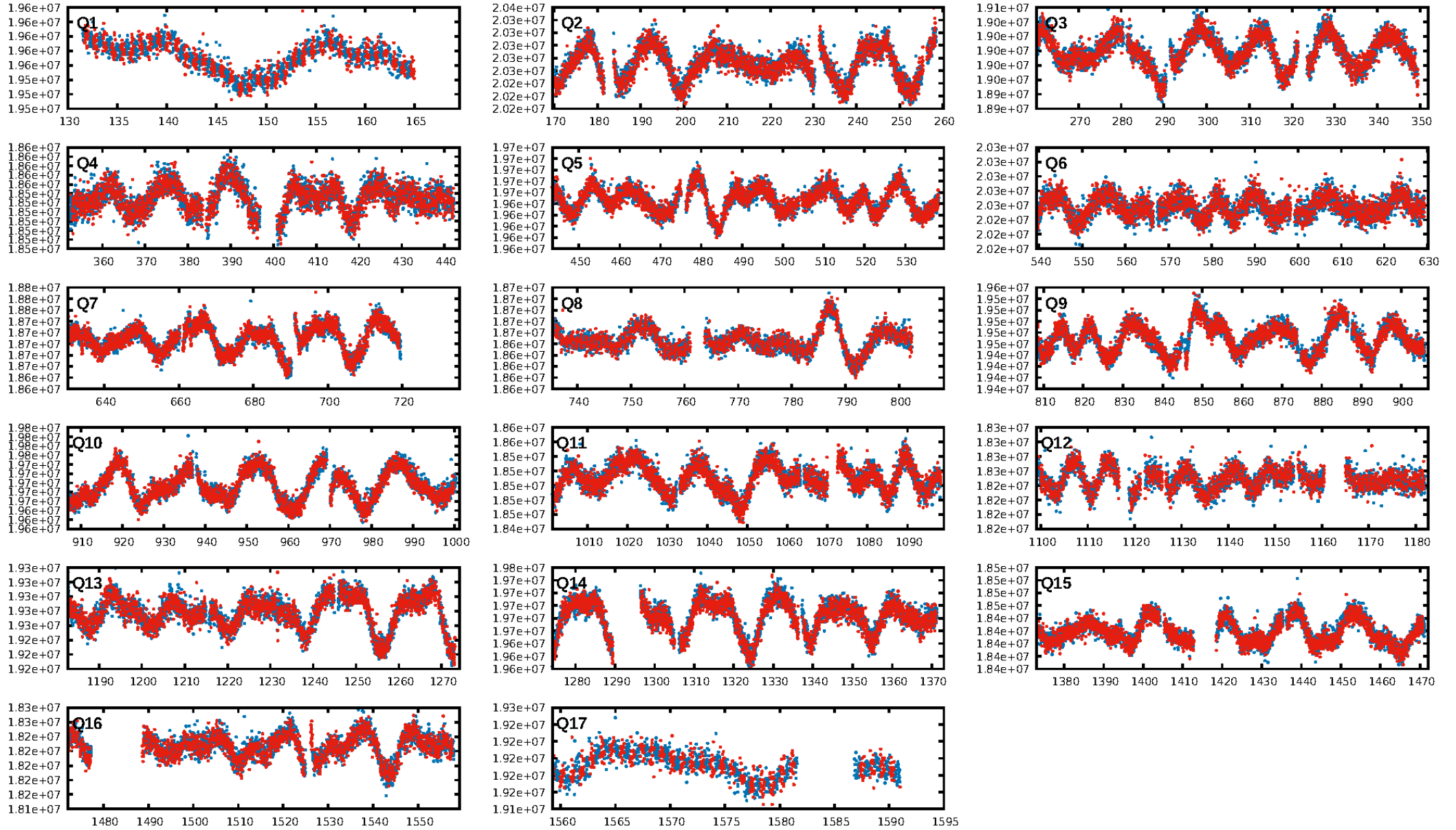
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [315.93σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.97e-12
RollingBand-fgt: 1.00 [1406/1406]
GhostDiagnostic-chr: -1.003
Centroid-sig: 0.0%
Centroid-so: 4.901 arcsec [3.24σ]
OotOffset-rm: 5.444 arcsec [20.47σ]
KicOffset-rm: 5.461 arcsec [19.74σ]
OotOffset-st: 0/3/3 [9]
KicOffset-st: 0/3/3 [9]
DiffImageQuality-fgm: 1.00 [9/9]
DiffImageOverlap-fno: 1.00 [17/17]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 09:29:07 Z

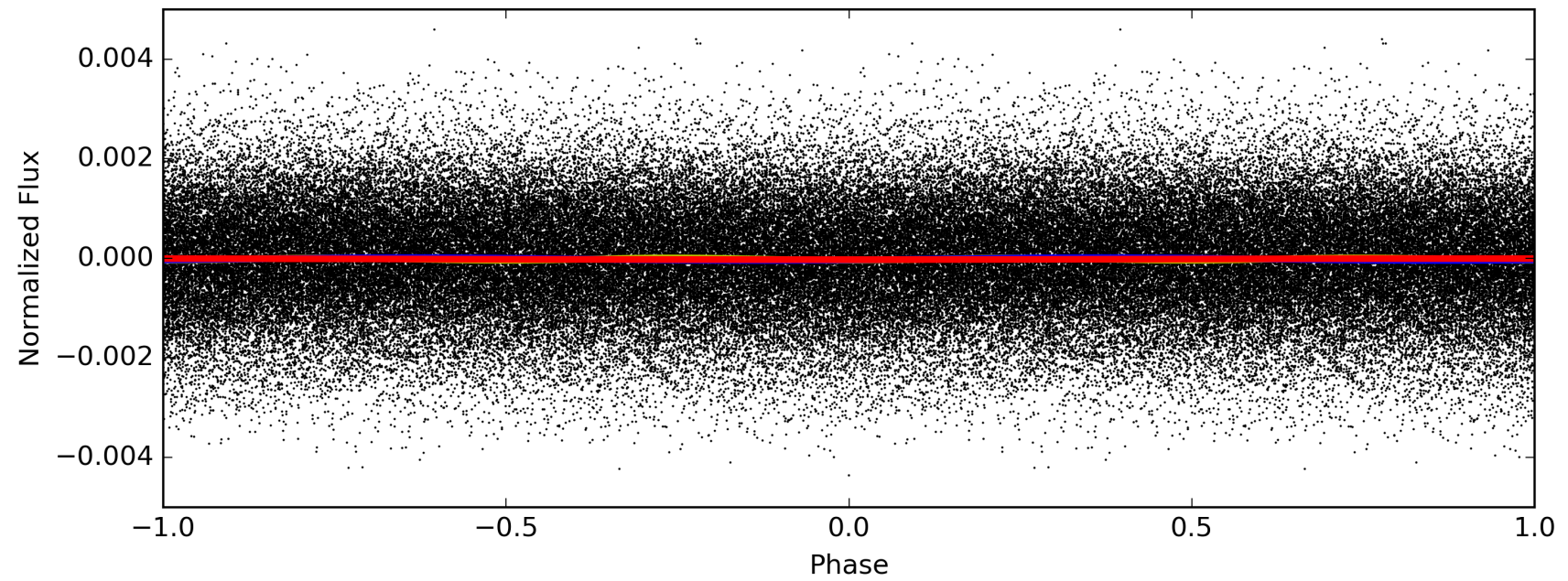
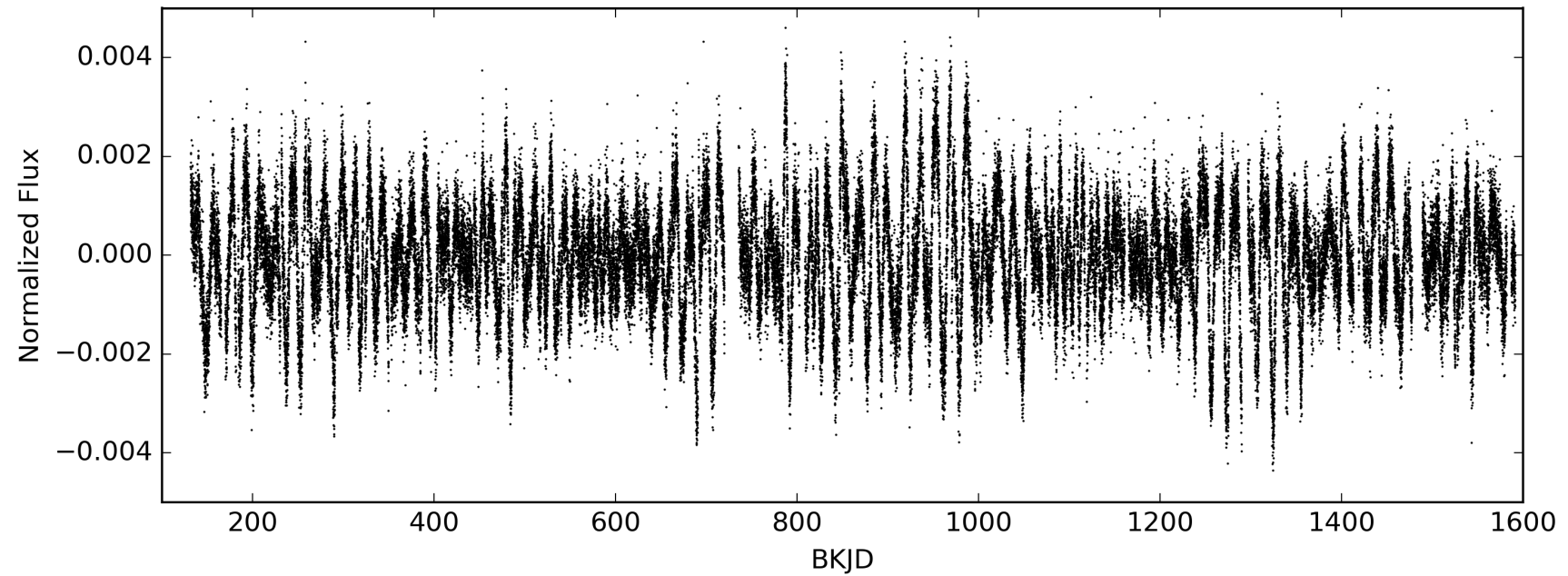
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 012217824-01, PDC Light Curves



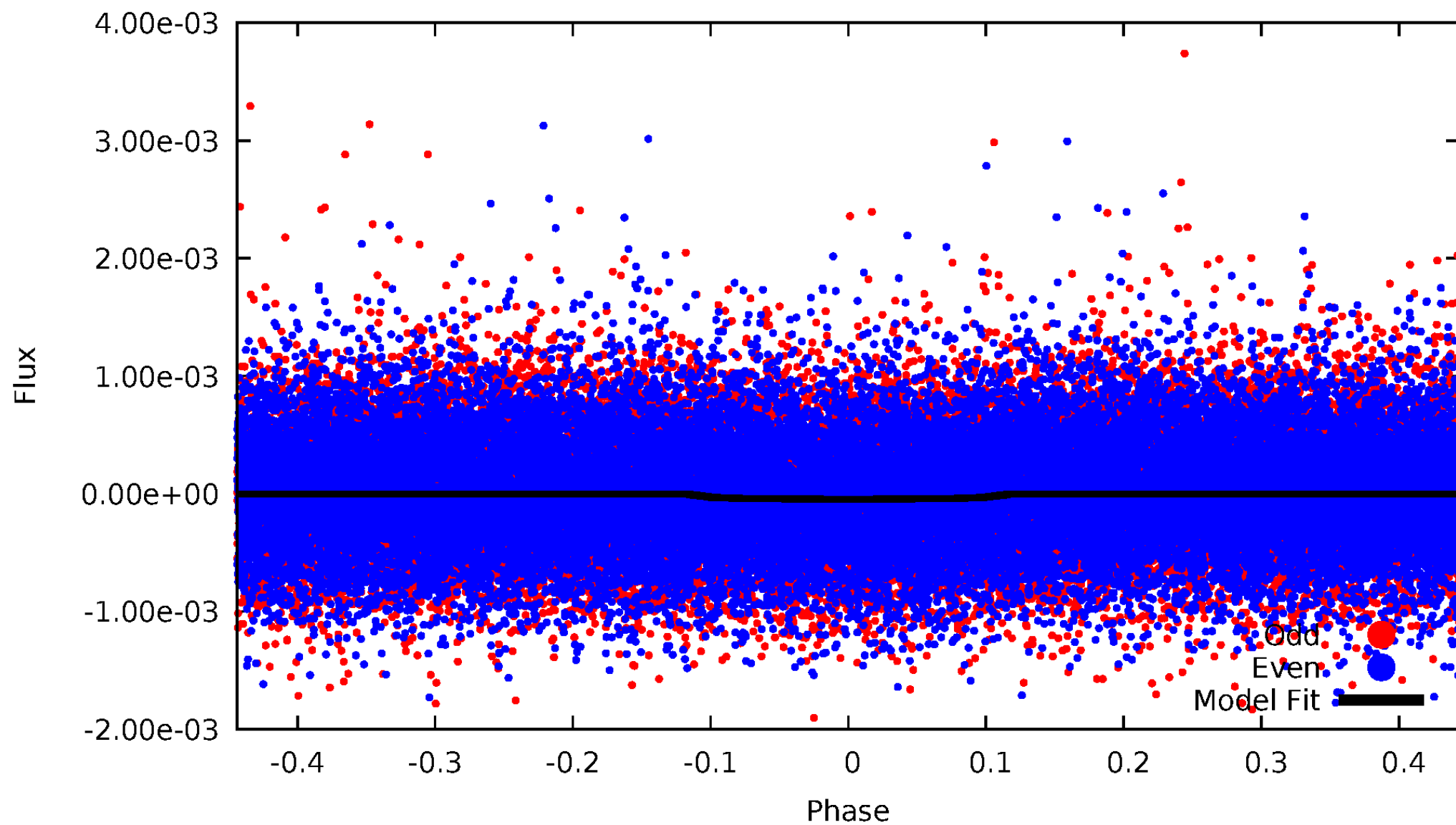
TCE 012217824-01

— P = 0.457 days — P = 0.914 days — P = 1.829 days



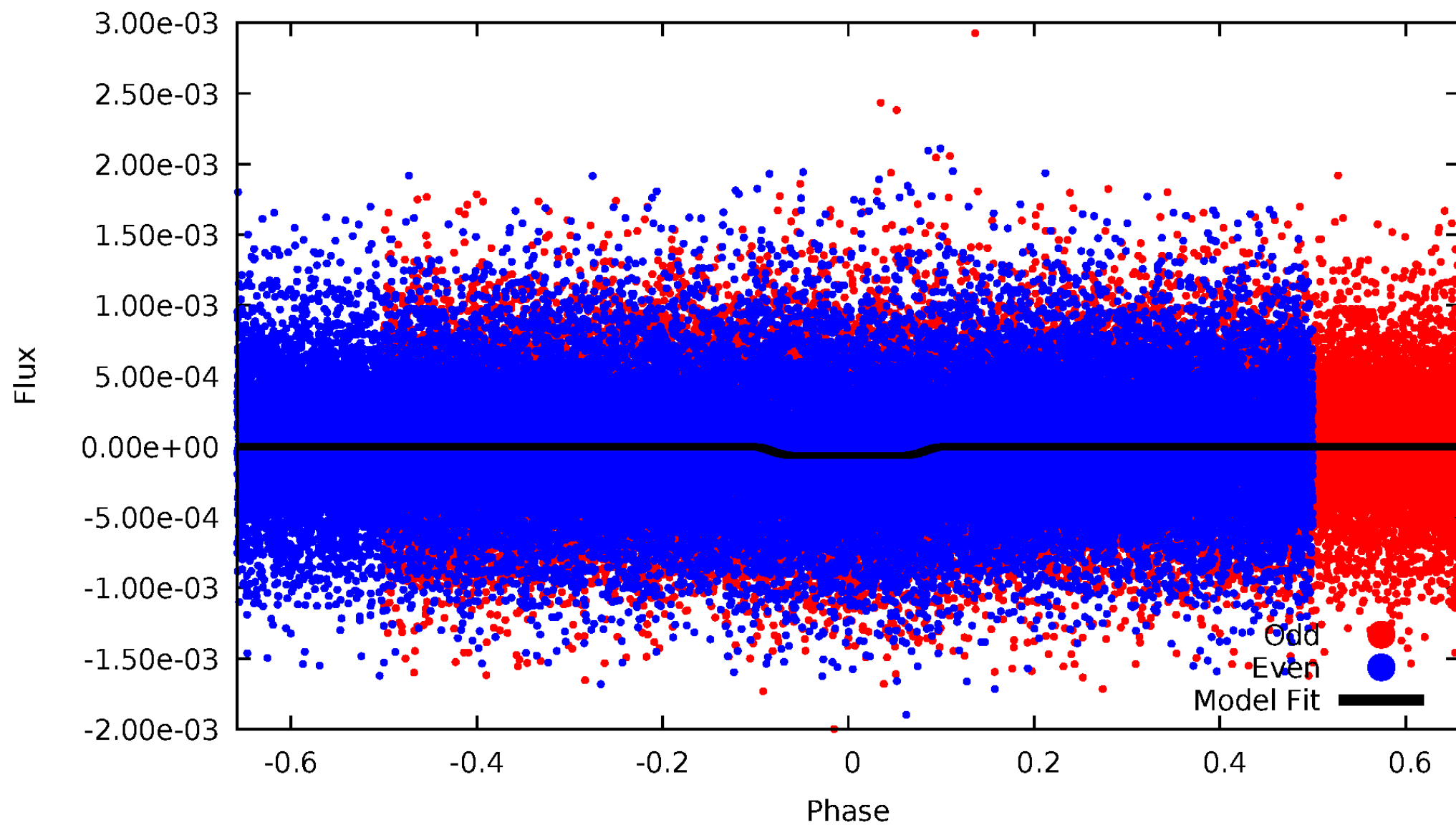
DV Odd/Even

TCE 012217824-01

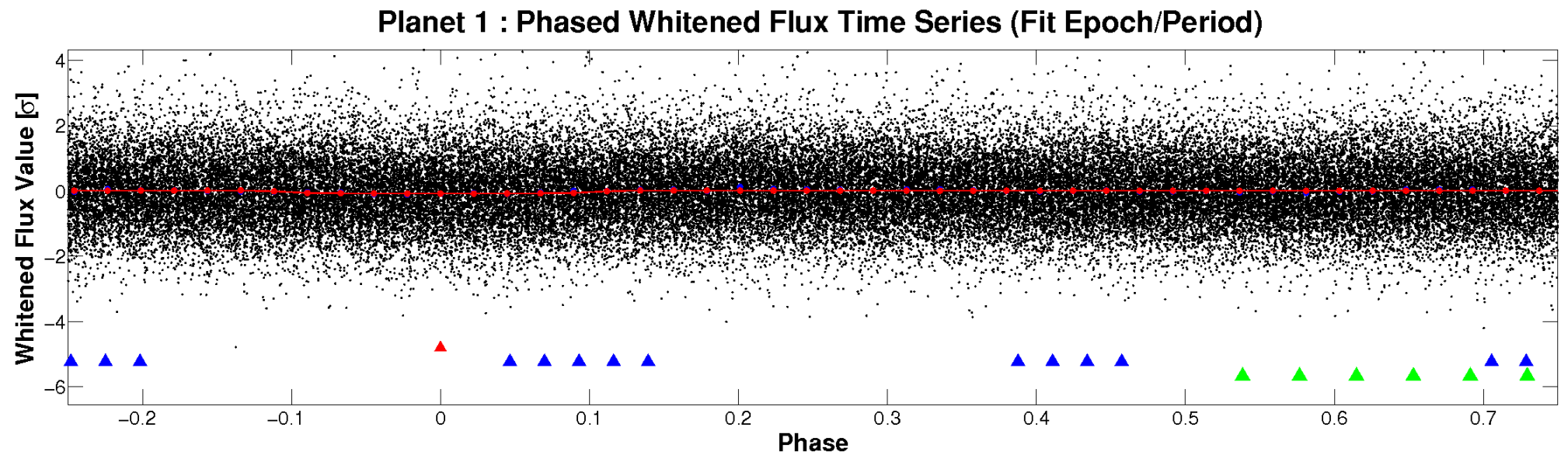
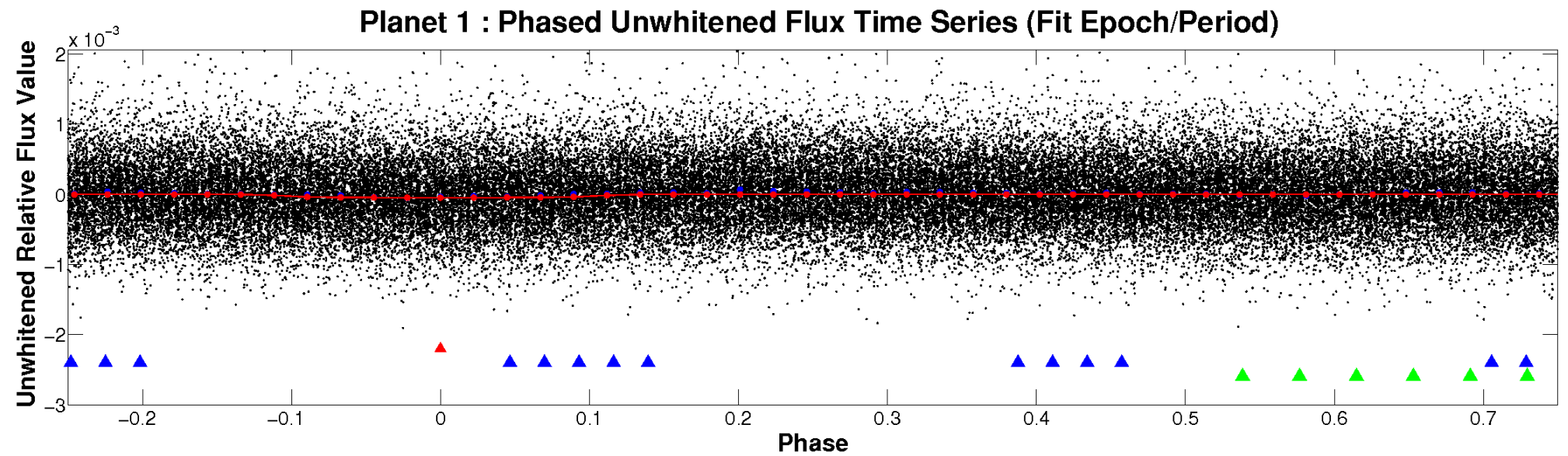


ALT Odd/Even

TCE 012217824-01

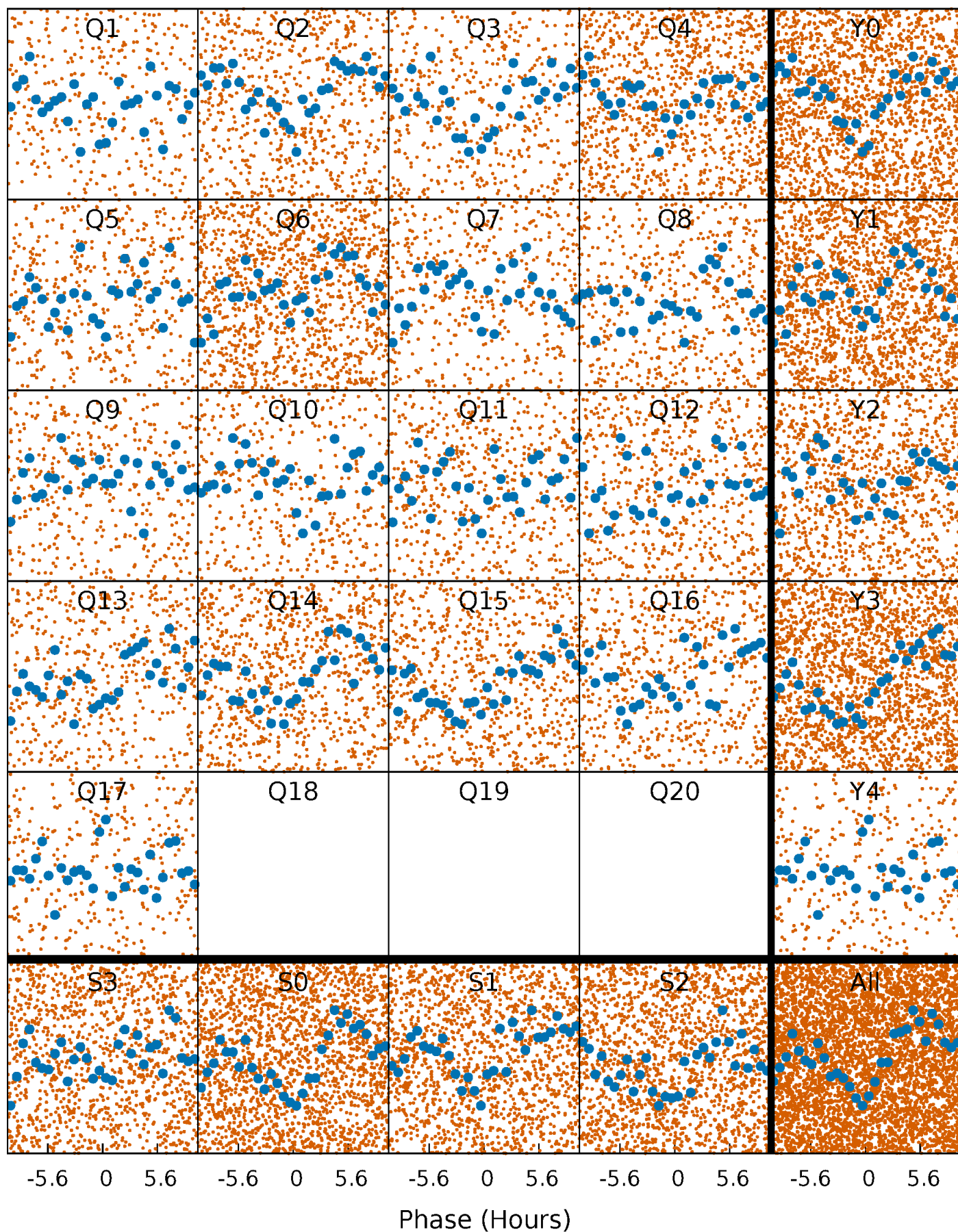


Non-Whitened Vs. Whitened Light Curve



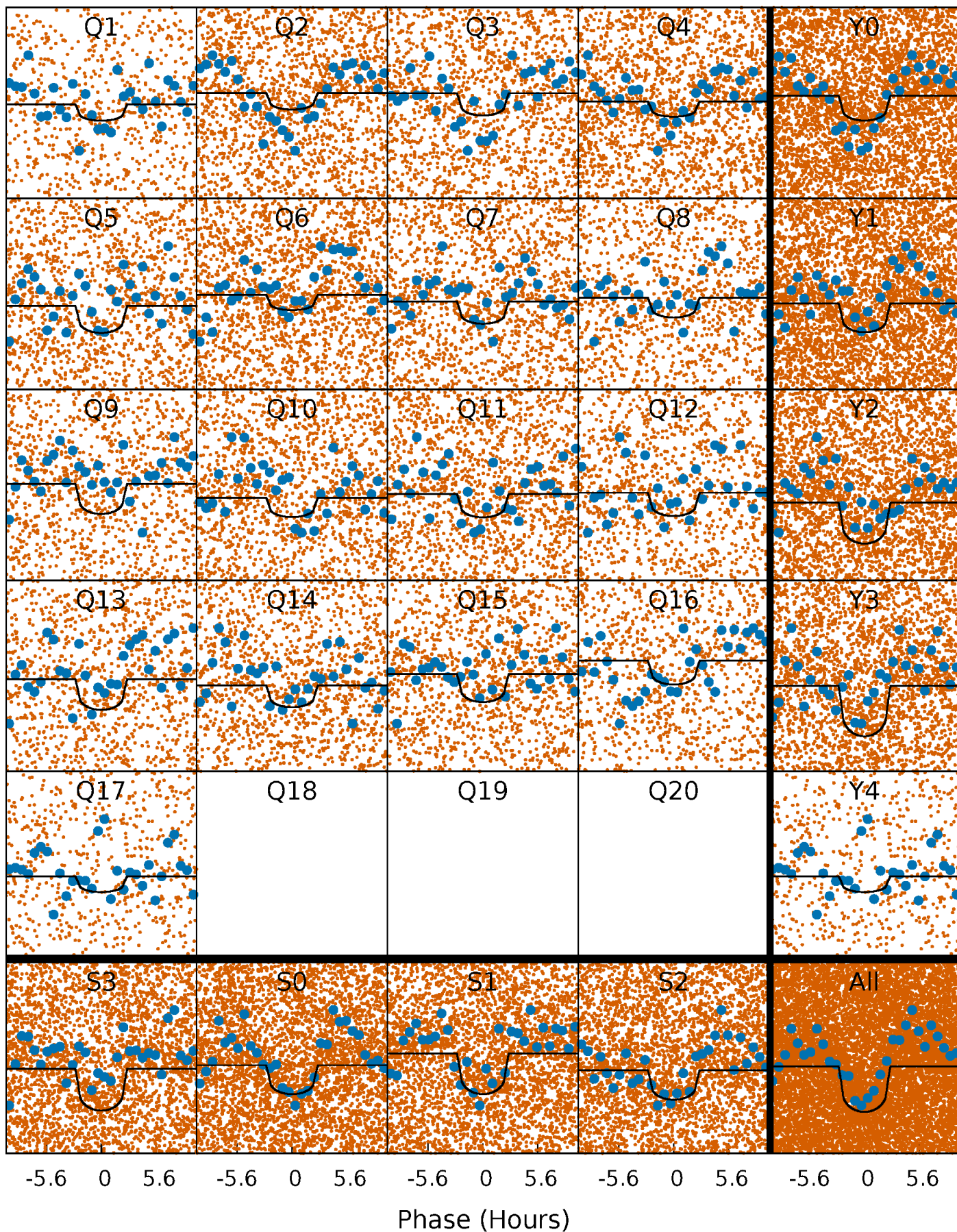
PDC Quarter-Phased Transit Curves

TCE 012217824-01 P= 0.914365 Days $T_0=131.870888$ (BKJD)



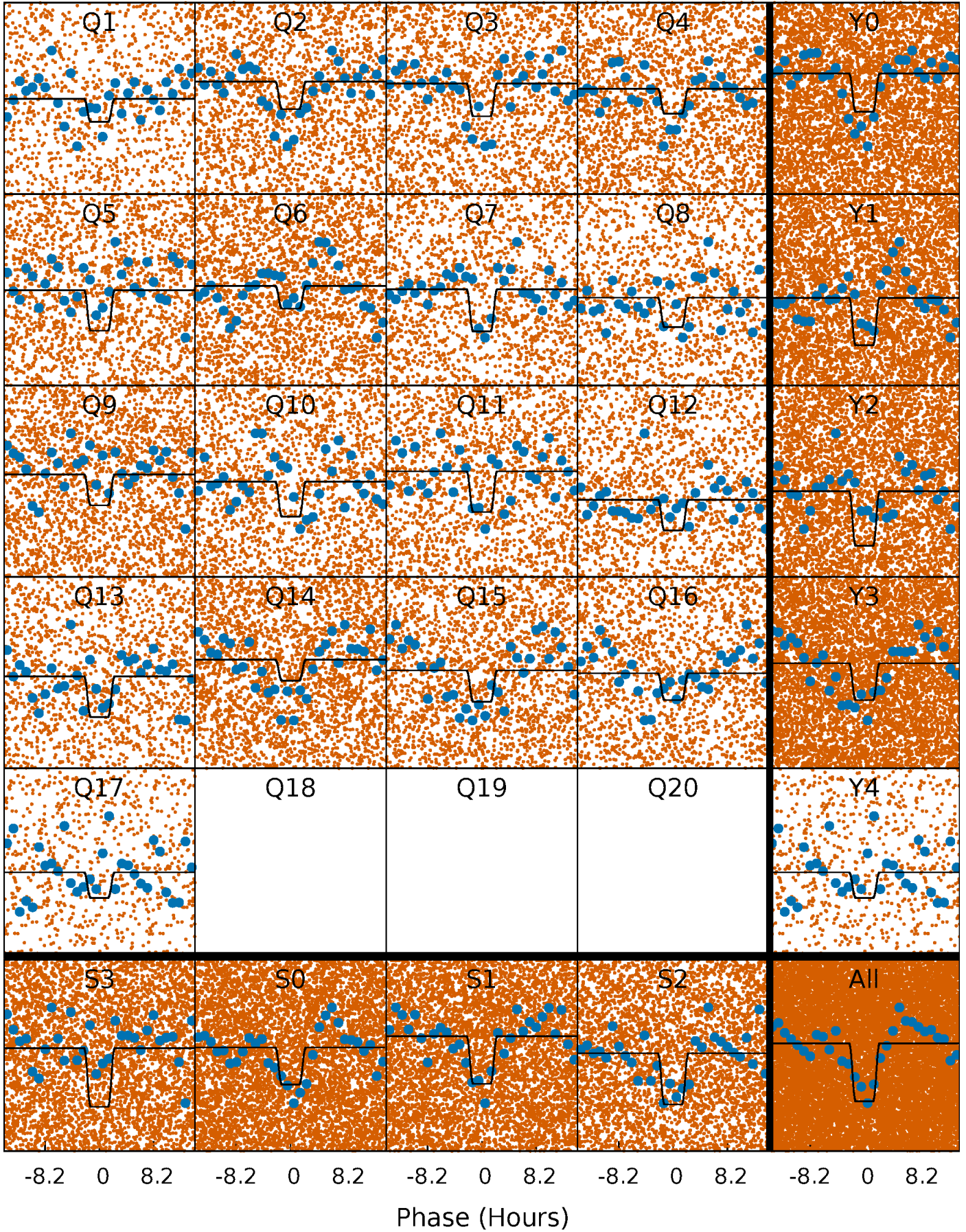
DV Quarter-Phased Transit Curves

TCE 012217824-01 P= 0.914365 Days $T_0=131.870888$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

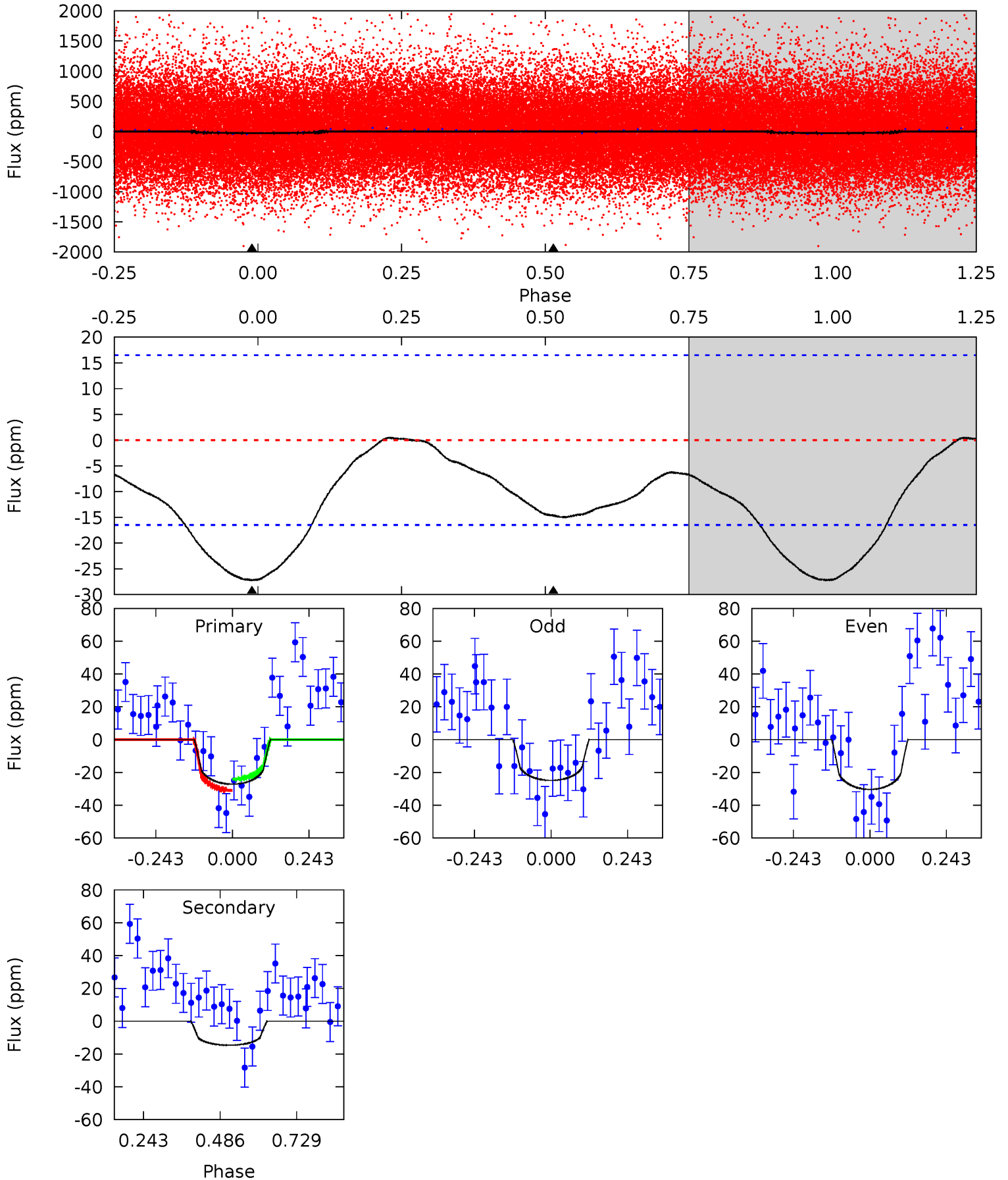
TCE 012217824-01 P= 0.914340 Days $T_0=131.863356$ (BKJD)



DV Model-Shift Uniqueness Test

012217824-01, P = 0.914365 Days, E = 130.956523 Days

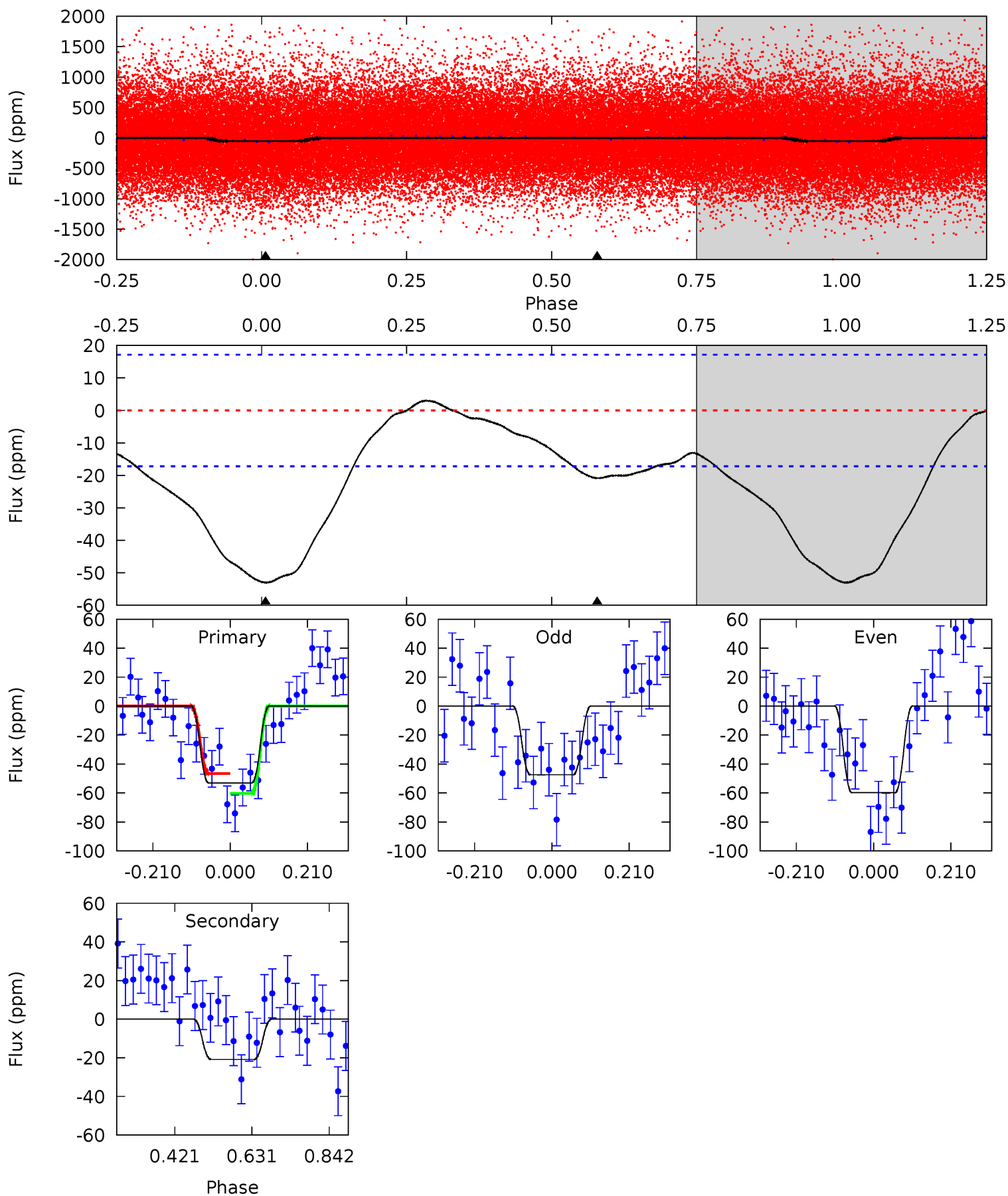
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.21	3.89	0	0	4.37	1.17	0.82	7.21	7.21	3.89	3.89	0.72	0.86	0.02	0.92



Alt Model-Shift Uniqueness Test

012217824-01, P = 0.914340 Days, E = 130.949016 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.6	5.35	0	0	4.41	1.25	1.11	13.6	13.6	5.35	5.35	1.59	0.76	0.05	1.75



Stellar Parameters For KIC 012217824

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5889^{+159}_{-177}	$4.547^{+0.036}_{-0.204}$	$-0.240^{+0.300}_{-0.300}$	$0.861^{+0.246}_{-0.082}$	$0.952^{+0.109}_{-0.120}$	$2.101^{+0.408}_{-1.062}$
	+3%/-3%	+1%/-4%	+125%/-125%	+29%/-10%	+11%/-13%	+19%/-51%
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 012217824-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-15 ± 4	$0.83^{+0.70}_{-0.56}$	2570^{+171}_{-115}	4200^{+2960}_{-953}	$3.826^{+34.511}_{-2.756}$
Alt.	-21 ± 4	$0.97^{+0.67}_{-0.56}$	2559^{+157}_{-108}	4211^{+2008}_{-810}	$4.020^{+18.957}_{-2.662}$

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

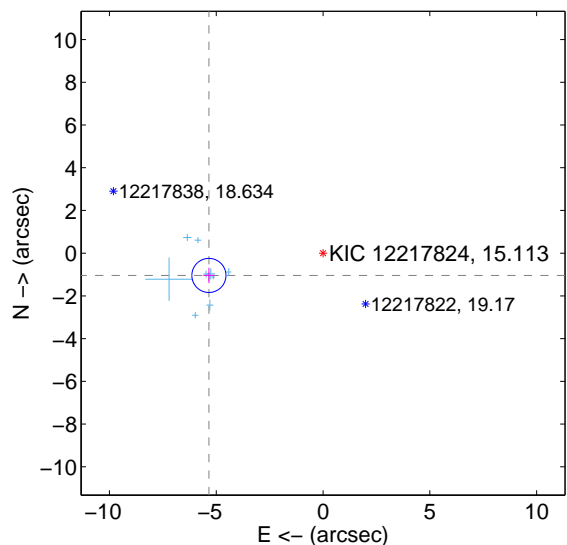
Supplemental centroid analysis for 012217824-01. Kepler magnitude: 15.11. Transit SNR 8.24

There are 9 quarters with good PRF difference image offsets

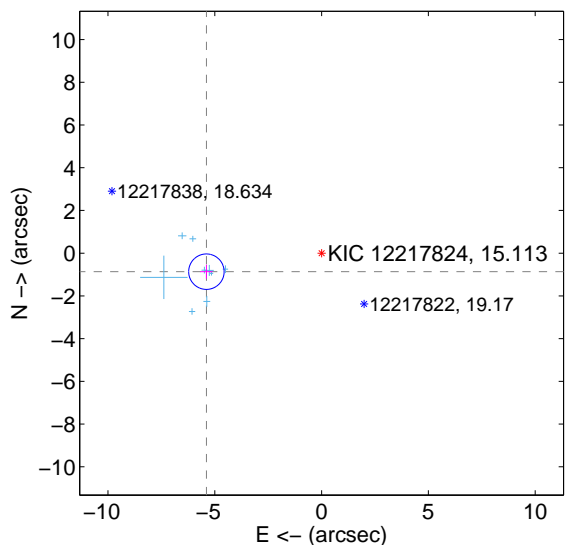
The direct PRF centroid is offset from the target star catalog position by about 0.20 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	5.444 ± 0.266	20.47	5.343 ± 0.260	-1.042 ± 0.358
PRF-fit source offset from KIC position	5.461 ± 0.277	19.74	5.392 ± 0.288	-0.866 ± 0.326
photometric centroid source offset	4.90 ± 1.51	3.24	3.53 ± 1.54	-3.40 ± 1.48

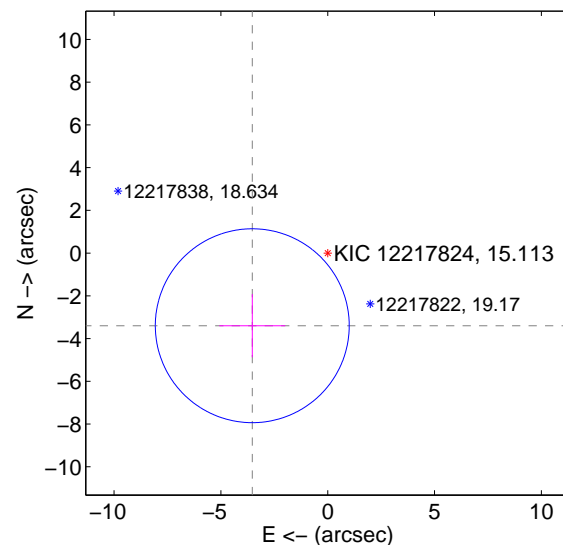
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

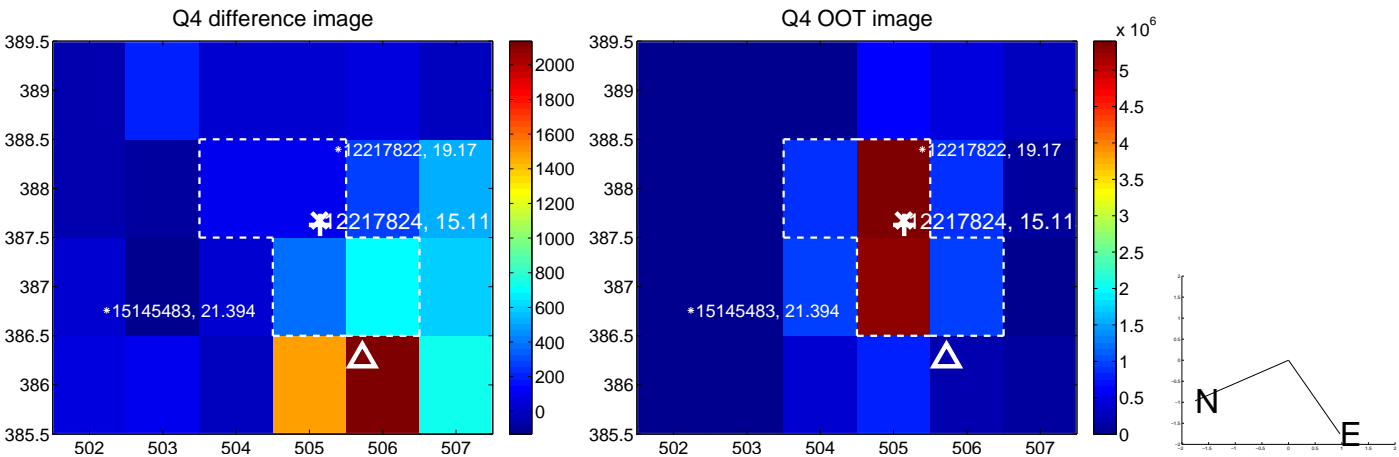
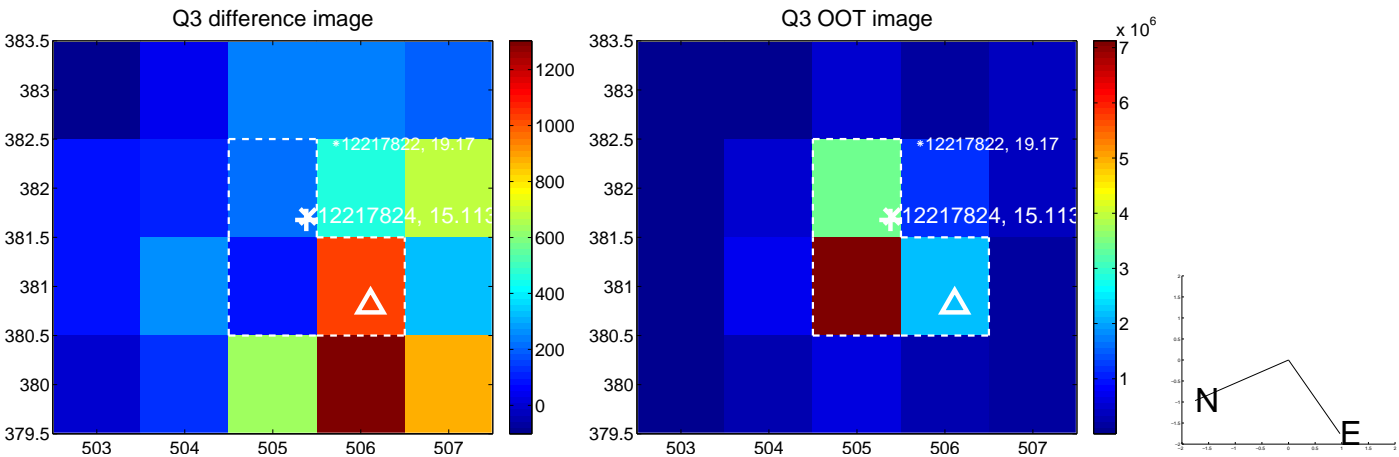
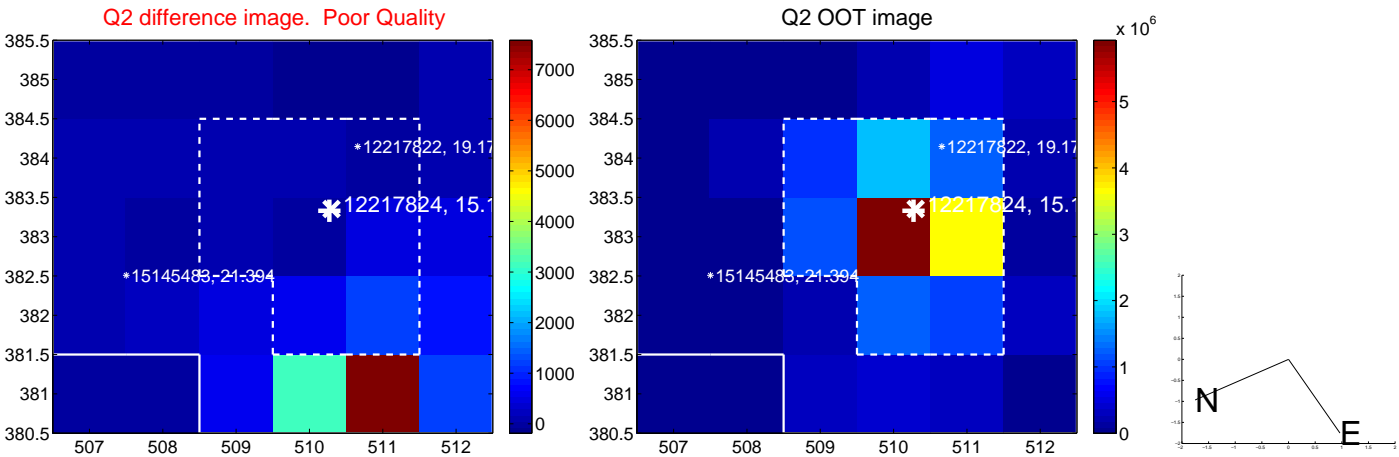
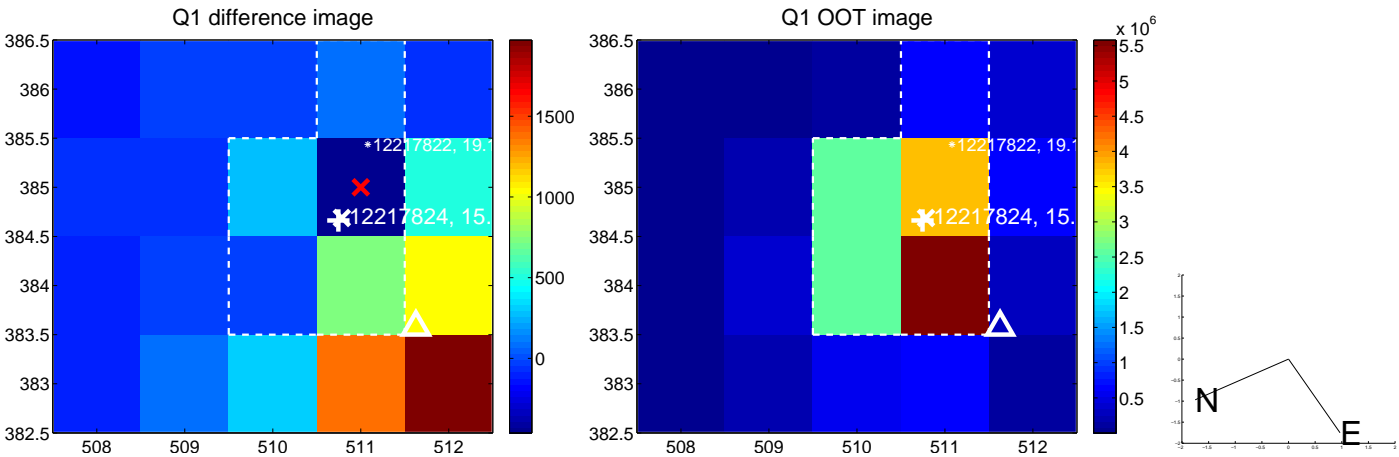


offset from photometric centroids

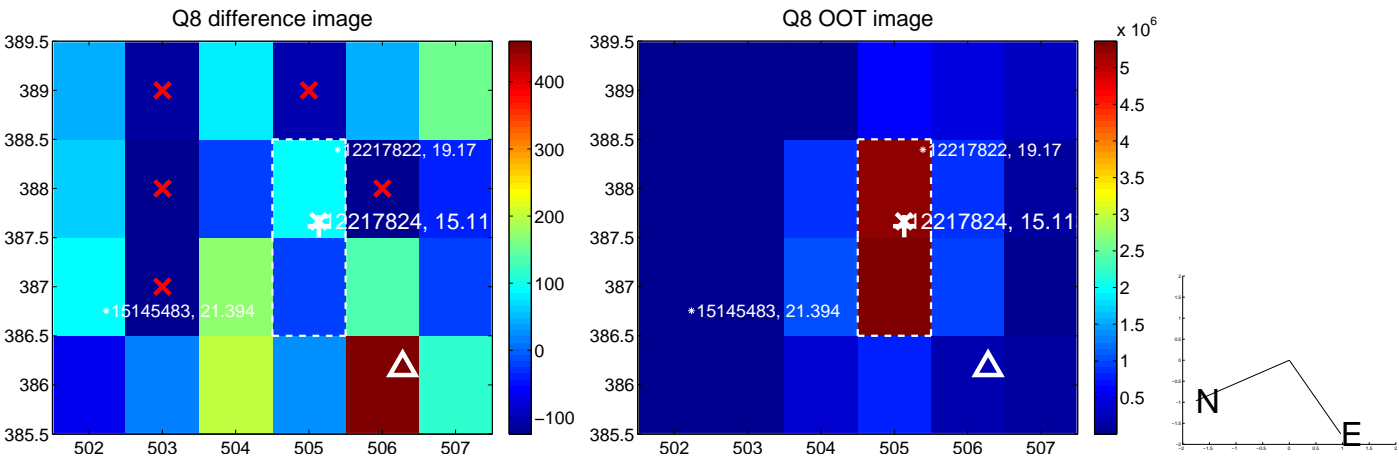
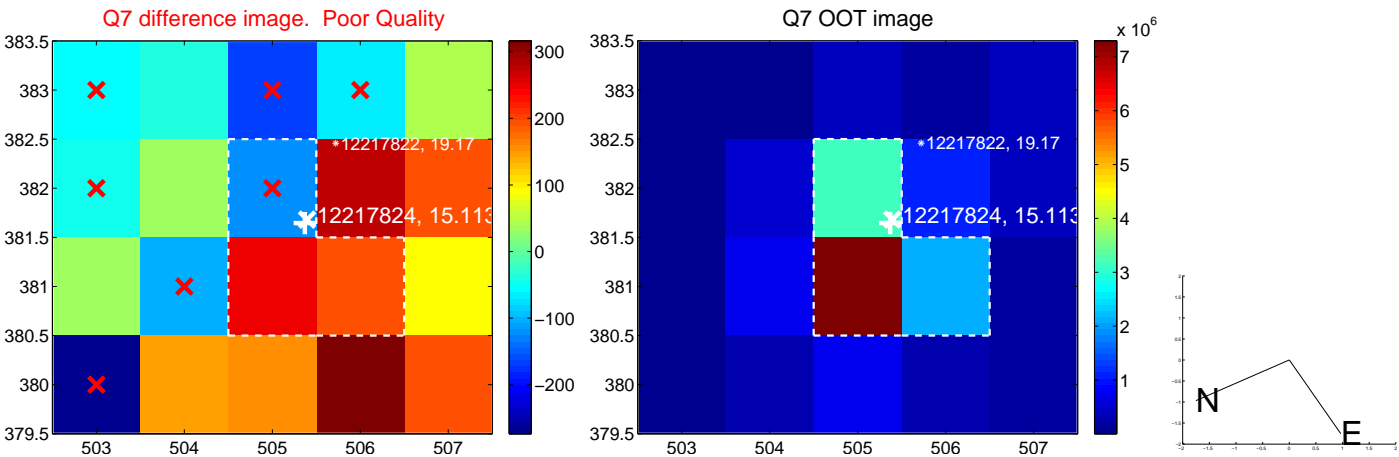
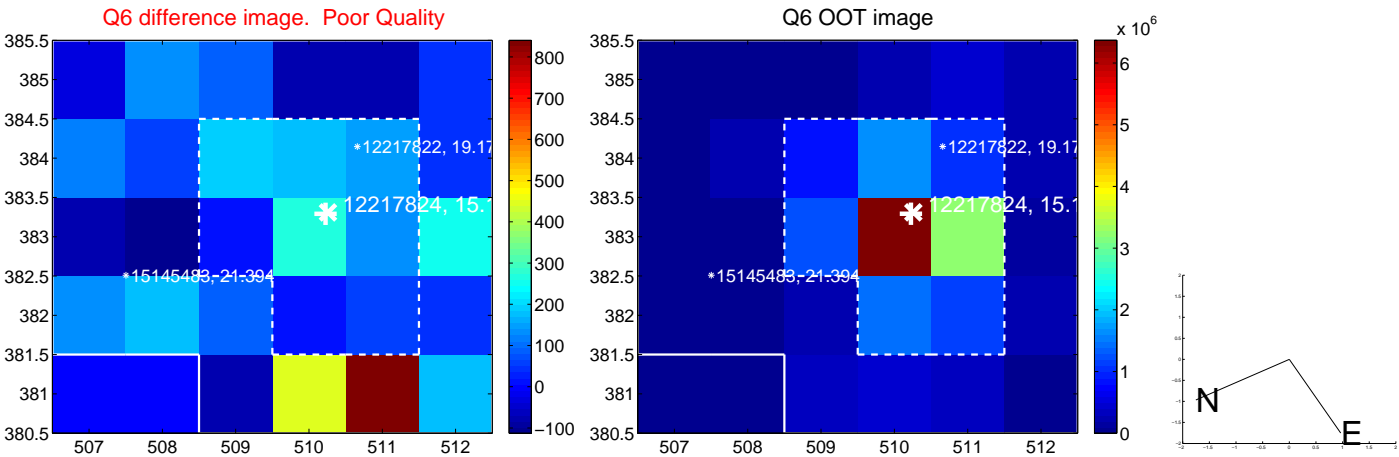
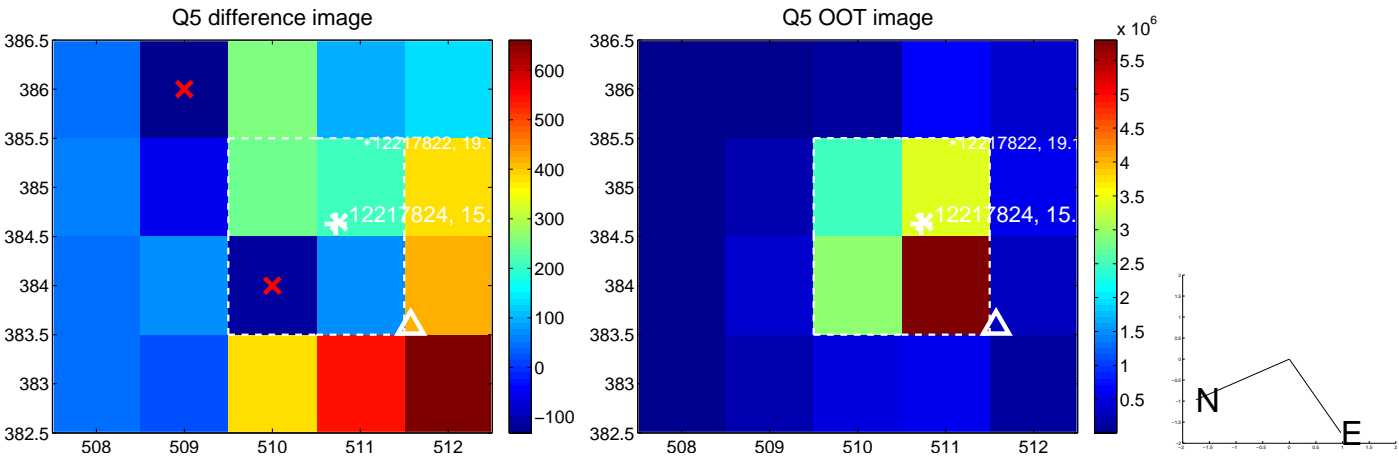


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

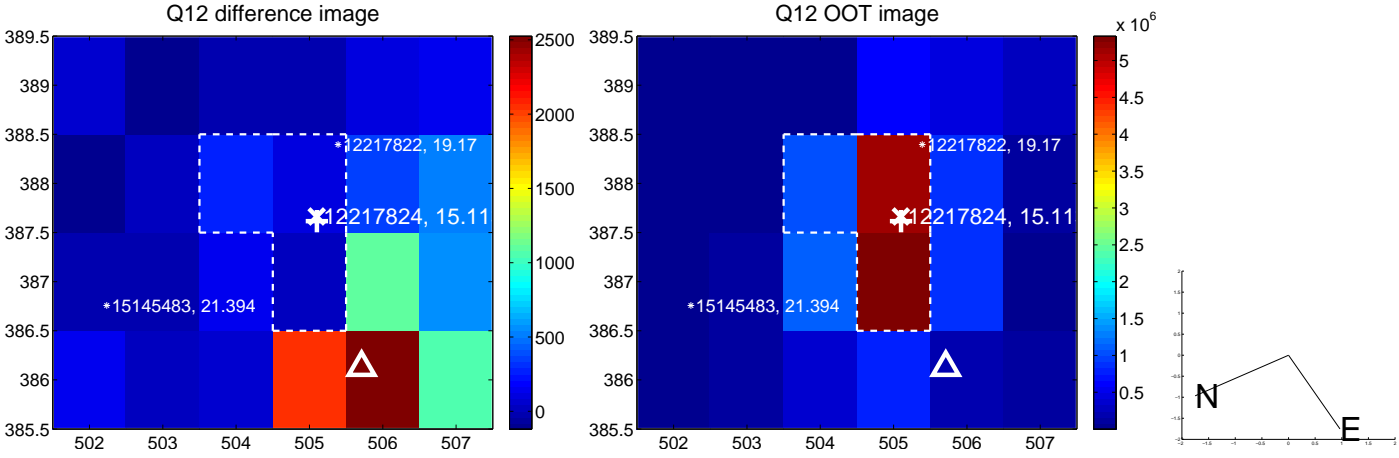
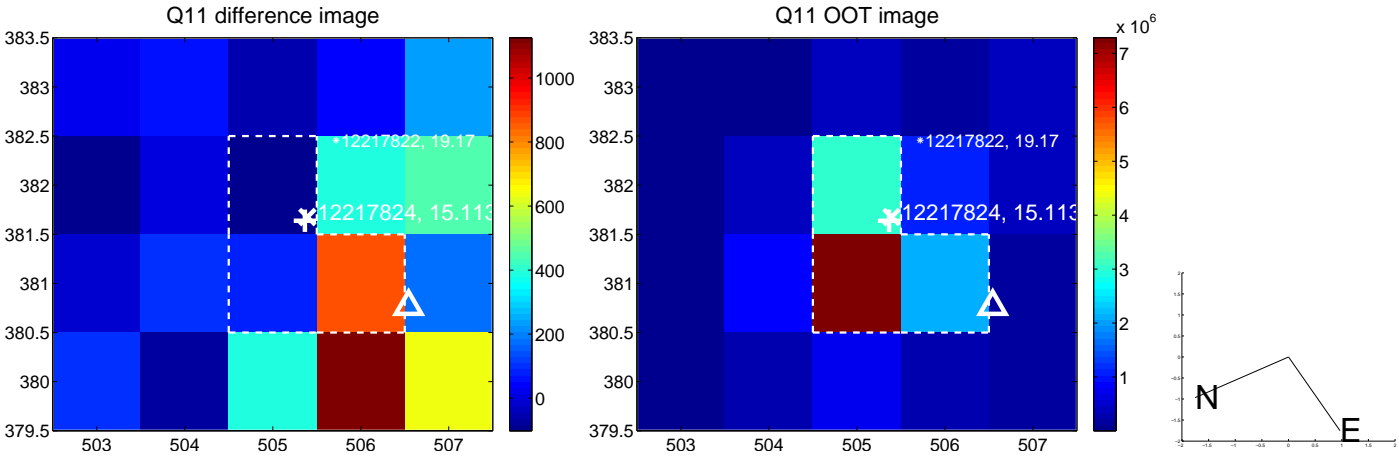
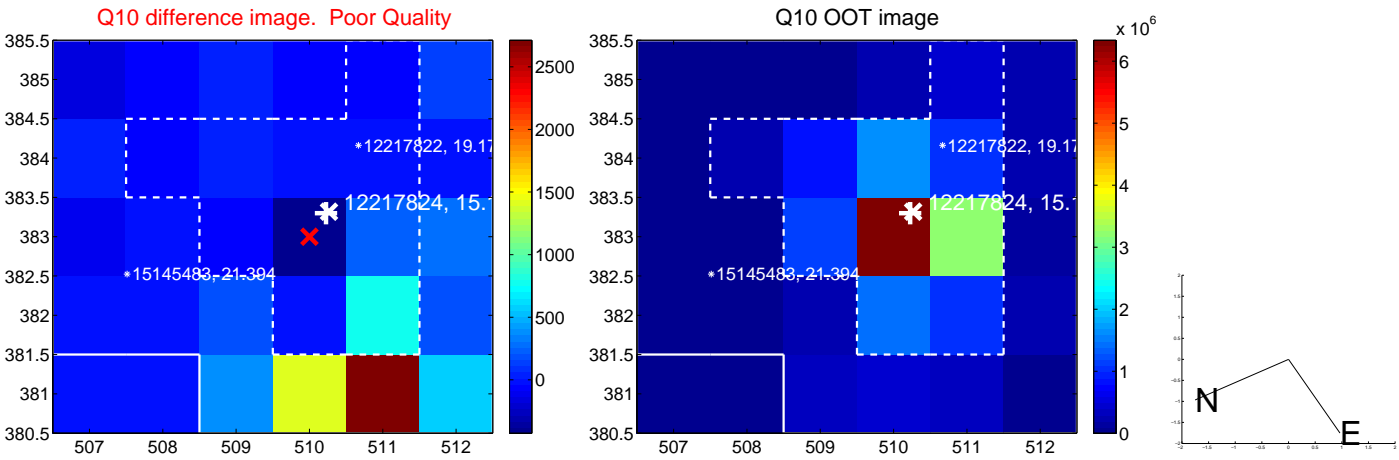
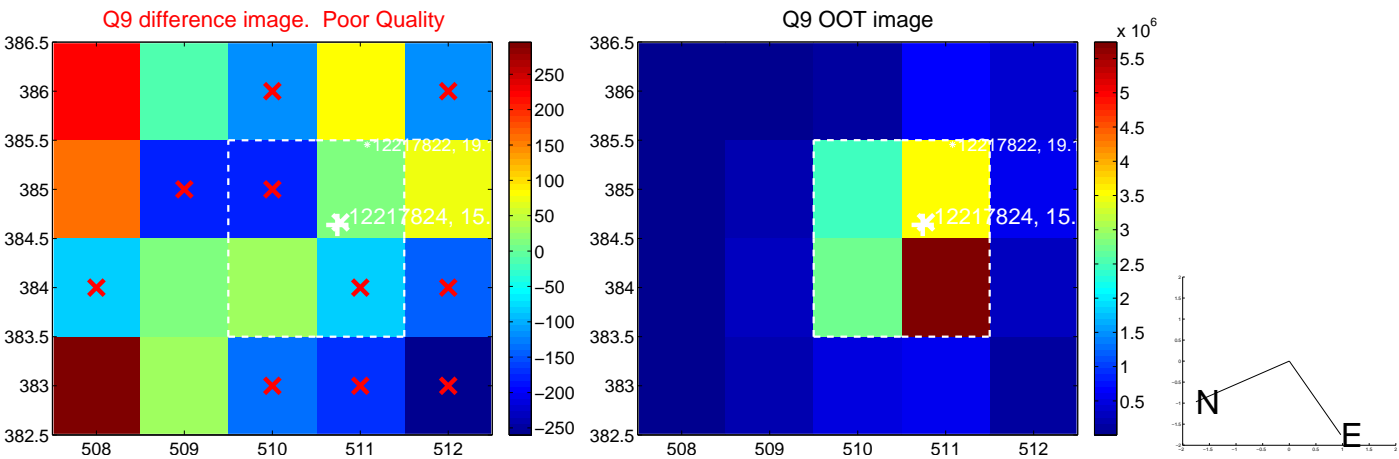
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



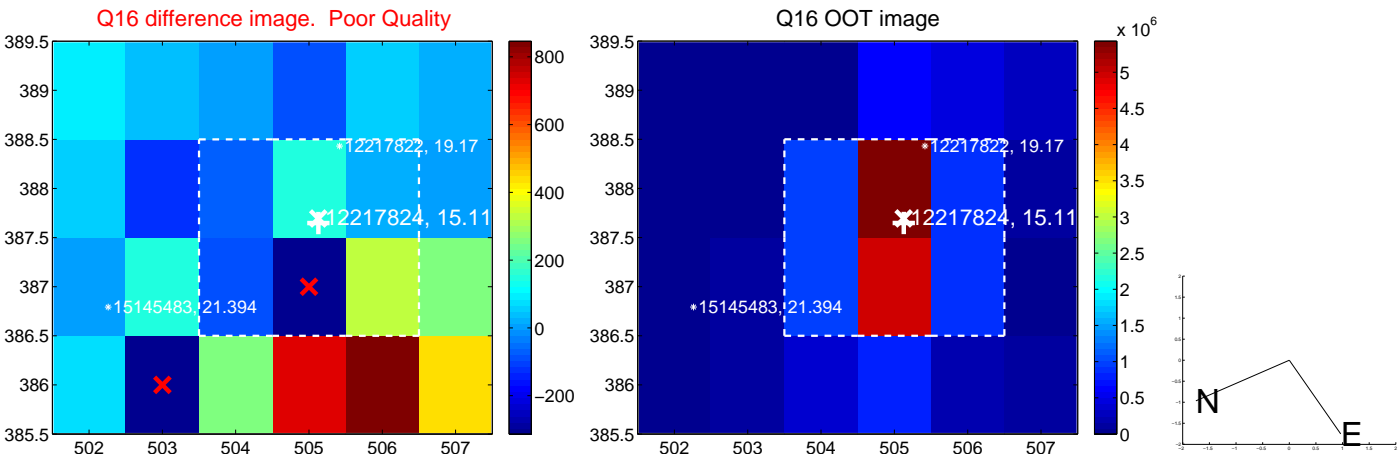
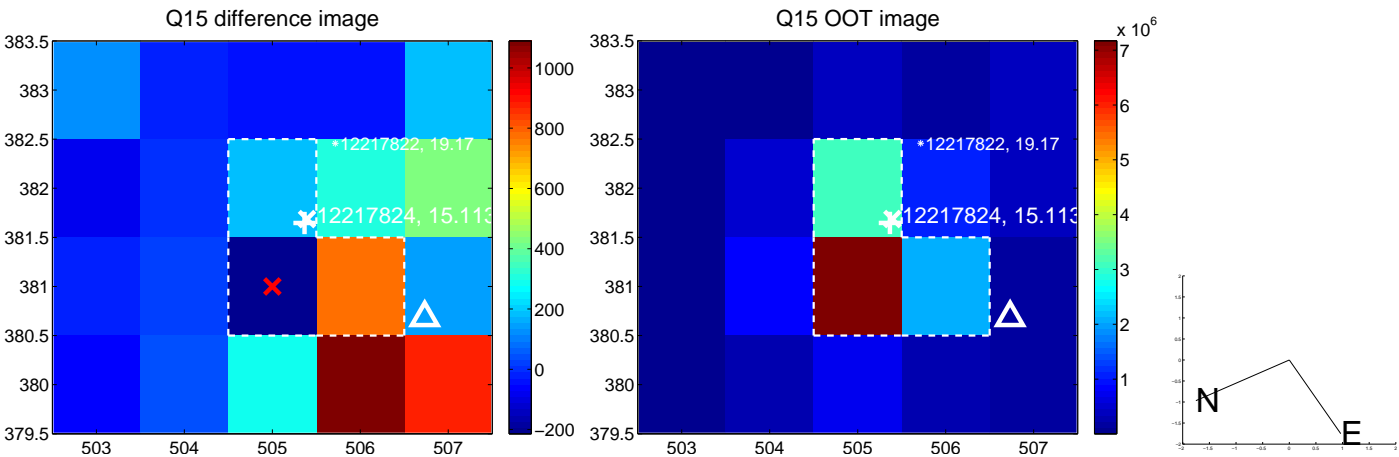
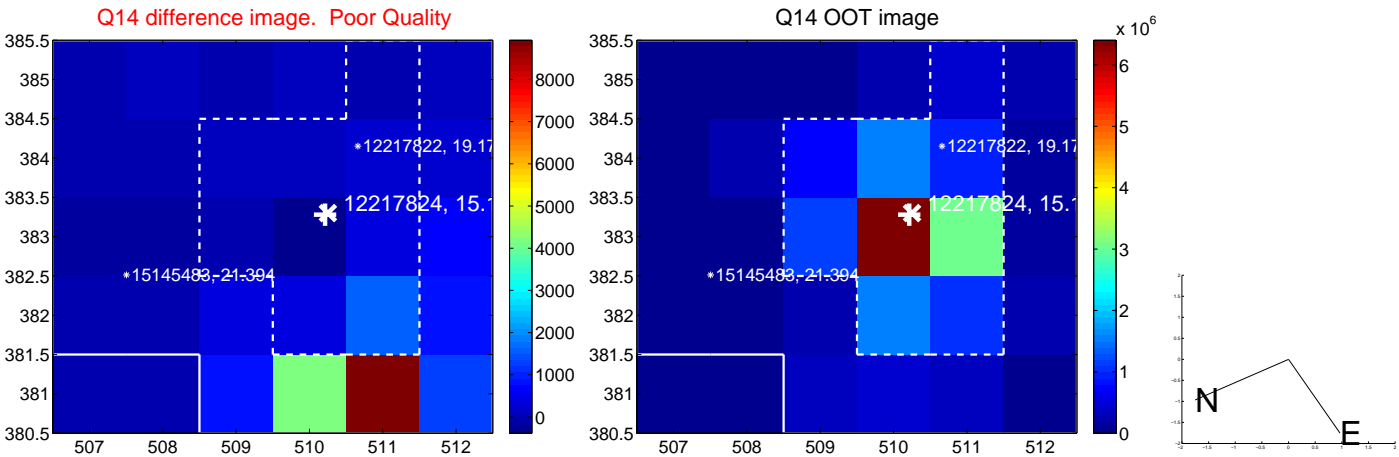
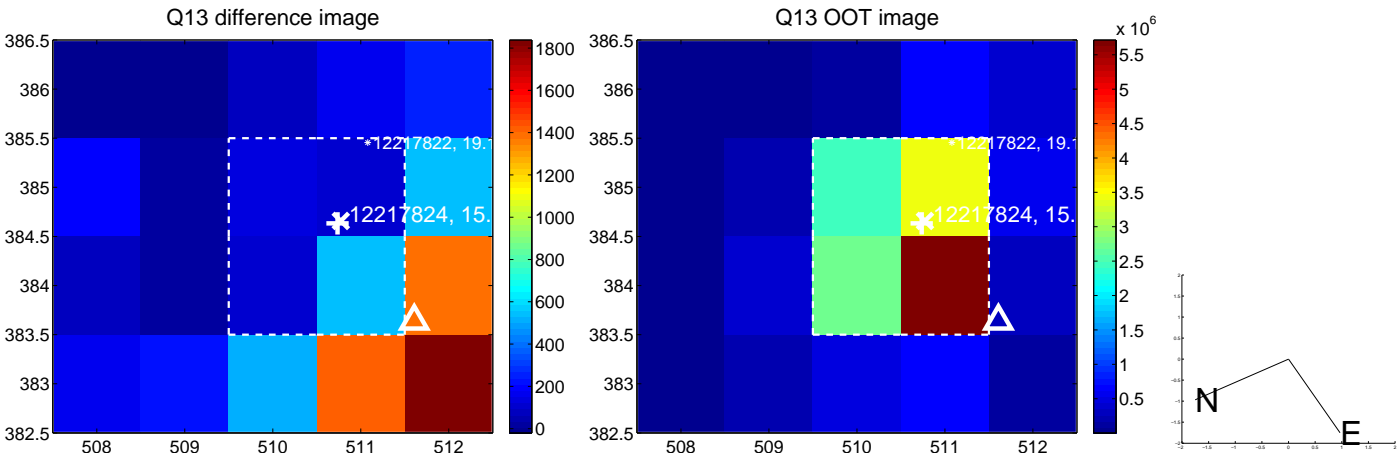
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



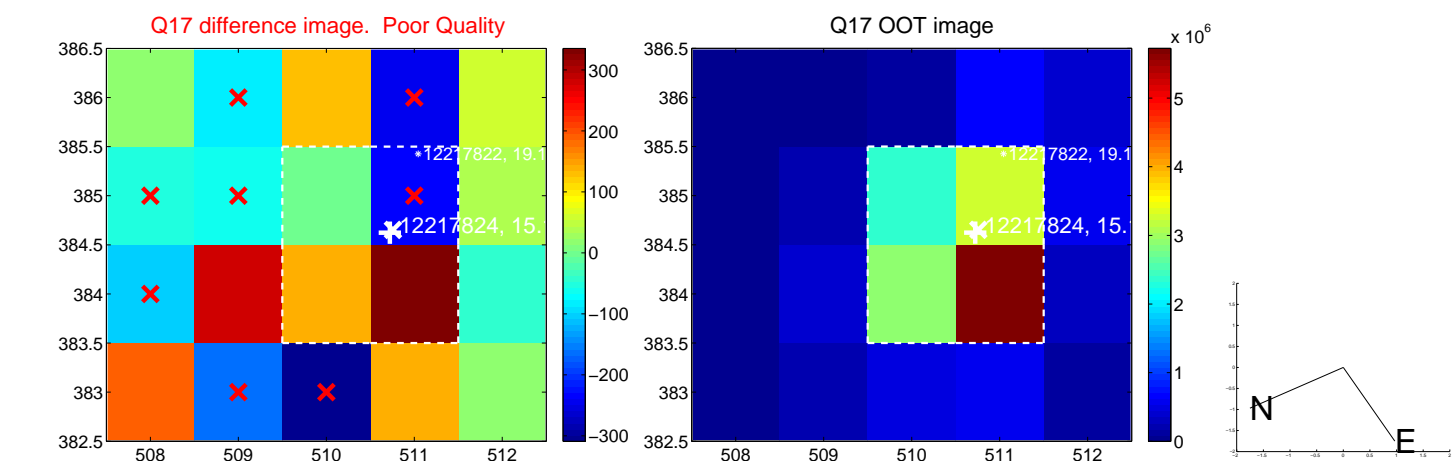
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



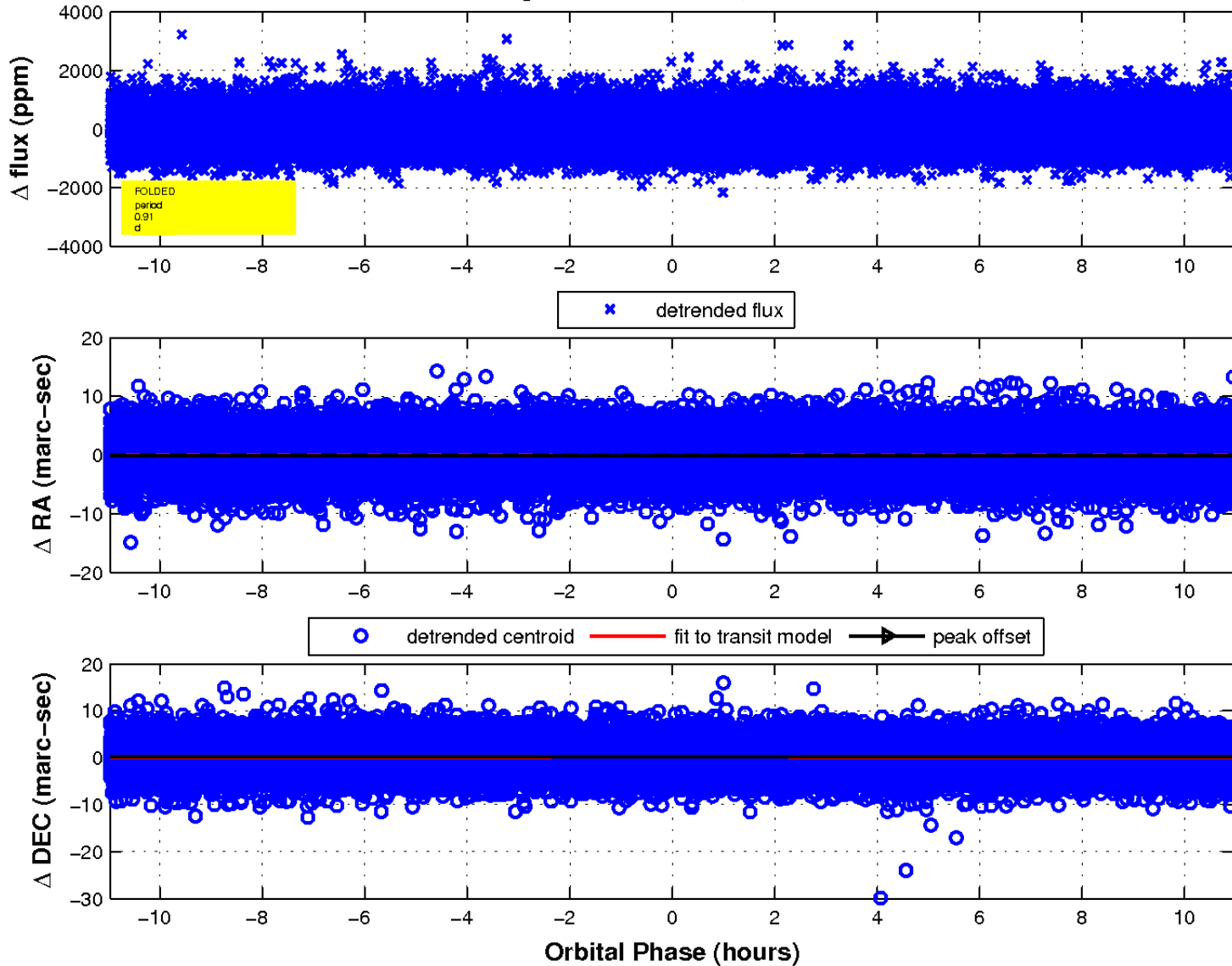
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

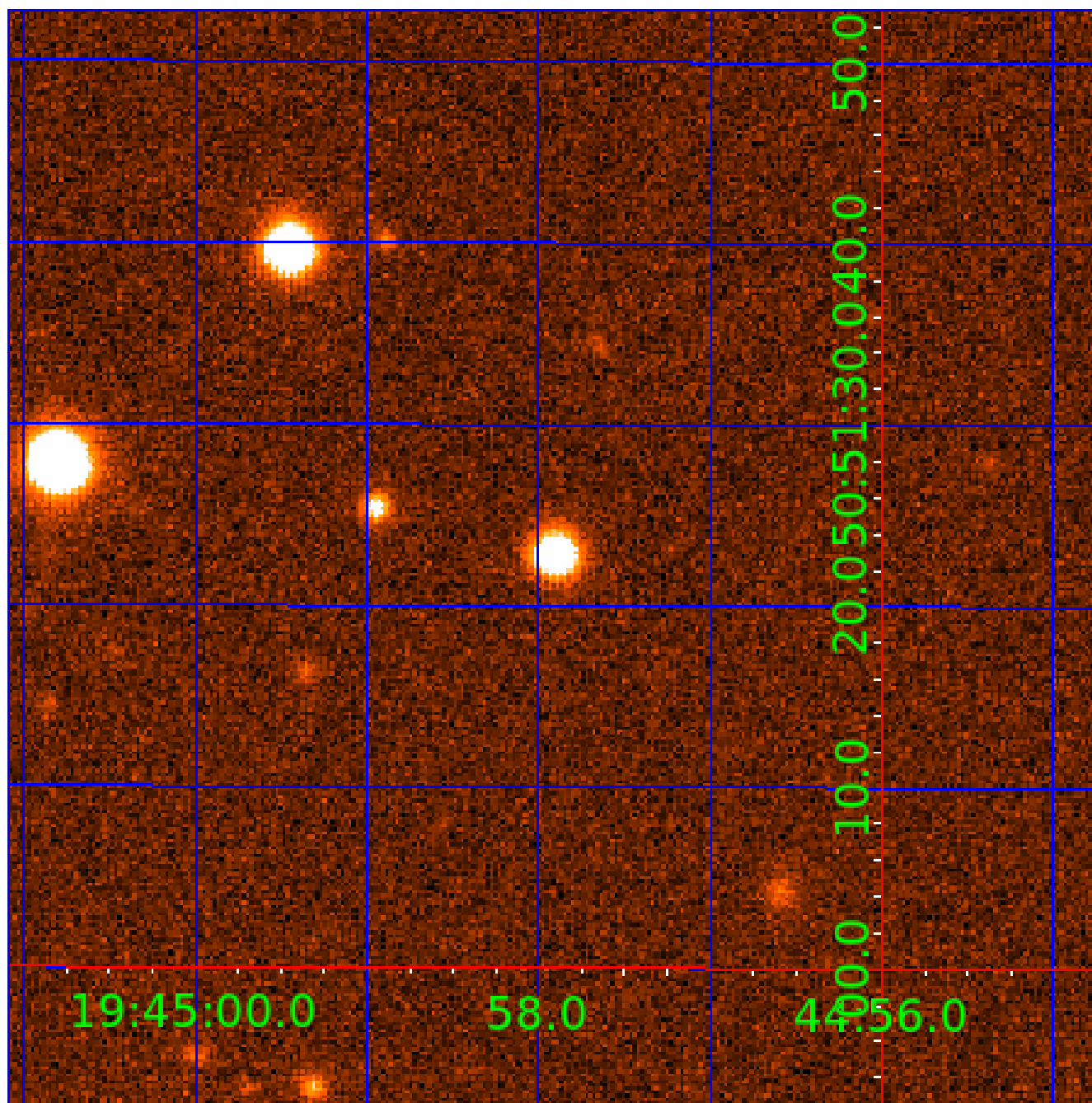


fluxWeightedCentroids, Planet 1 of 3



UKIRT Image

Declination



KIC 012217824

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})
012217824-01	OBS	No	0.914365	131.870888	46.6	4.869	7.6	8.2	0.86	5889	0.59	2426.07
012217824-03	OBS	No	224.968674	315.236159	725.2	10.358	8.7	8.3	0.86	5889	2.68	1.57

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
012217824-01	OBS	FP	0.00	1	0	1	0	LPP_DV—CENT_RESOLVED_OFFSET
012217824-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

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

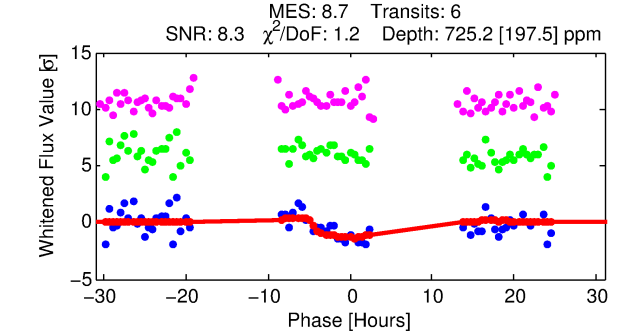
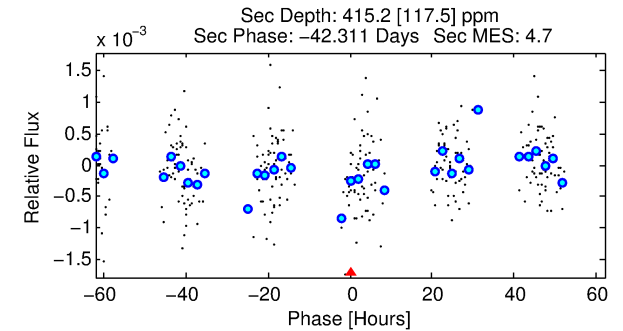
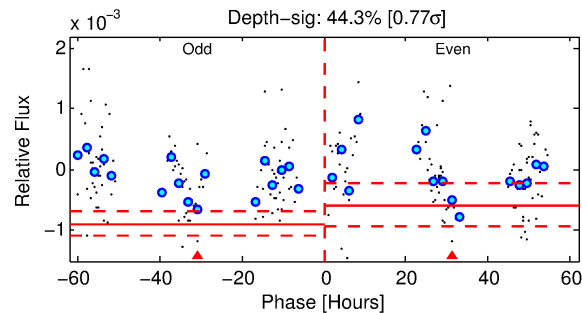
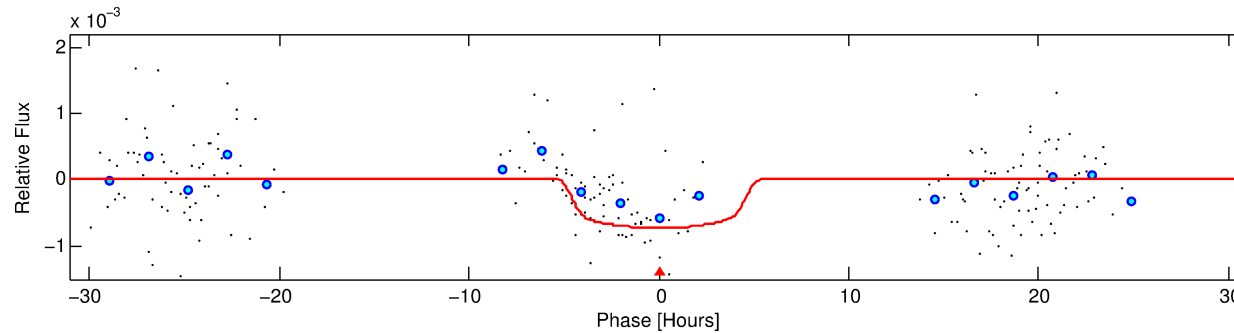
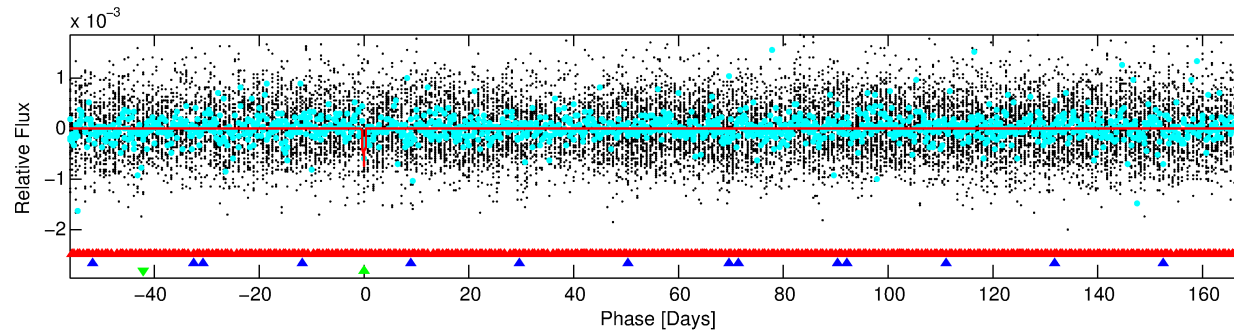
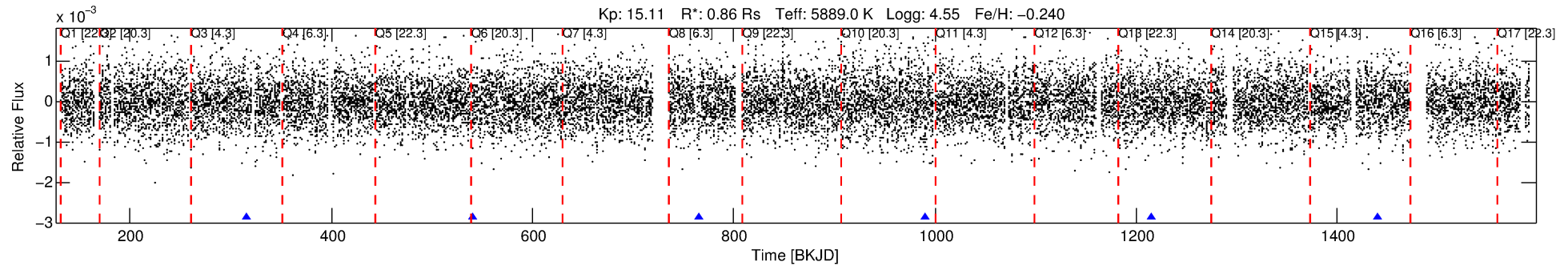
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 012217824-03

No Significant Match Found

DV One-Page Summary

KIC: 12217824 Candidate: 3 of 3 Period: 224.969 d



DV Fit Results:

Period = 224.96867 [0.00840] d
Epoch = 315.2362 [0.0968] BKJD
Rp/R* = 0.0286 [0.0051]
a/R* = 89.70 [67.89]
b = 0.88 [0.26]
Seff = 1.57 [0.61]
Teq = 286 [28] K
Rp = 2.68 [0.90] Re
a = 0.7125 [0.1757] AU
Ag = 16102.80 [9392.64] [1.71 σ]
Teffp = 4974 [584] K [8.0 σ]

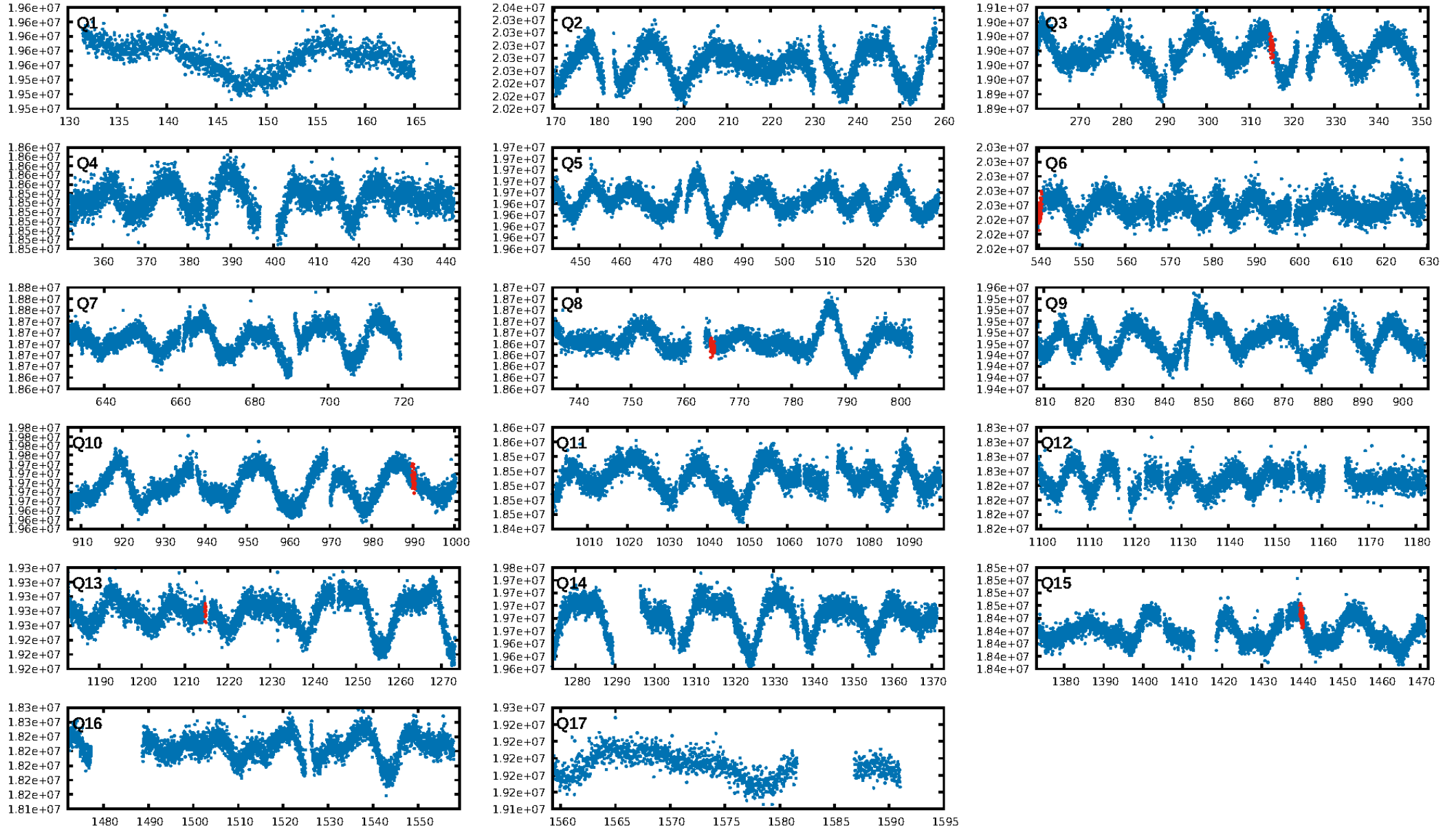
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [246.88 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 31.9%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 2.59e-10
RollingBand-fgt: 1.00 [6/6]
GhostDiagnostic-chr: -0.3319
Centroid-sig: 0.1%
Centroid-so: 2.907 arcsec [2.76 σ]
OotOffset-rm: N/A
KicOffset-rm: N/A
OotOffset-st: 0/0/0/0 [0]
KicOffset-st: 0/0/0/0 [0]
DiffImageQuality-fgm: N/A
DiffImageOverlap-fno: 0.00 [0/3]

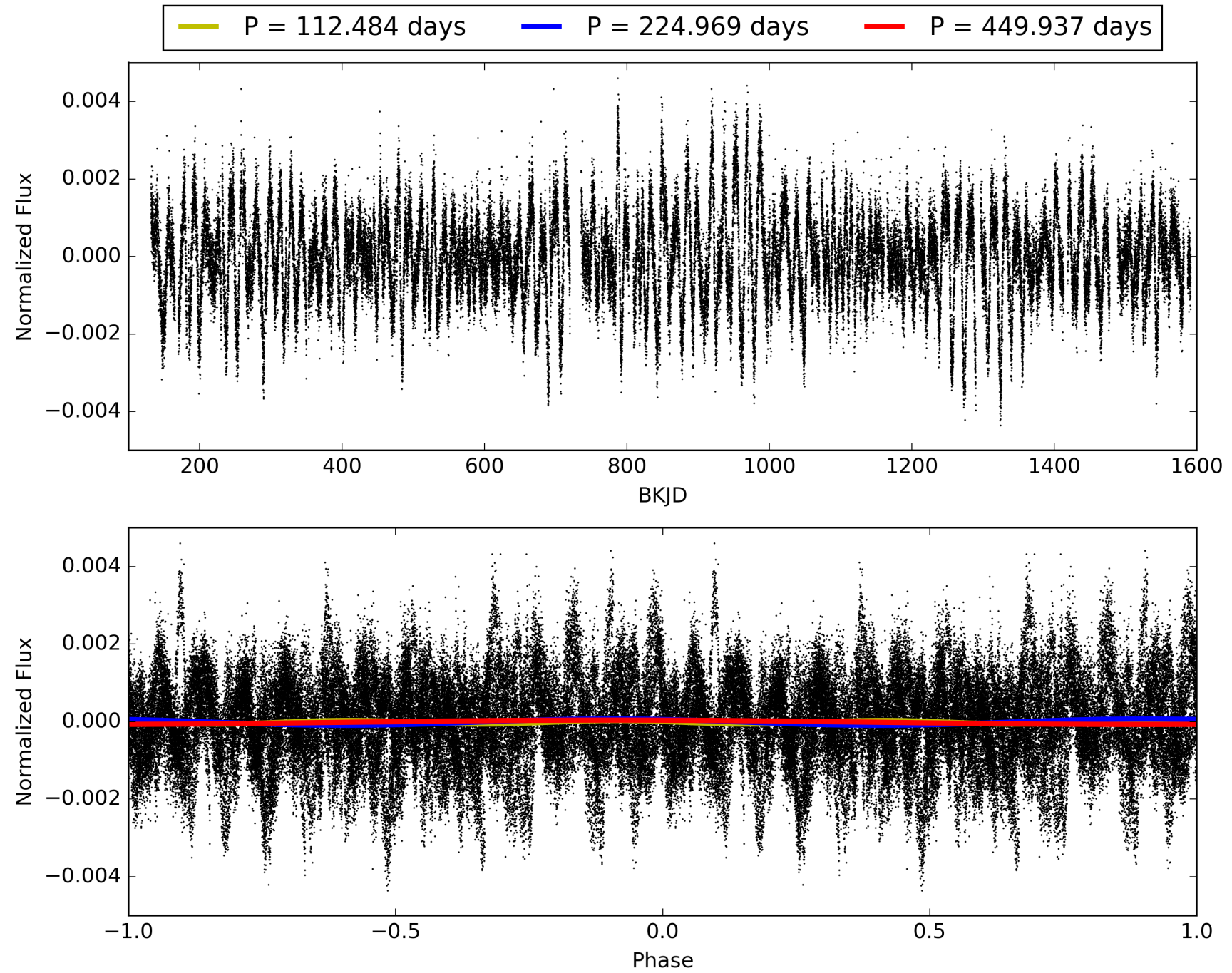
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 09:29:29 Z

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

TCE 012217824-03, PDC Light Curves

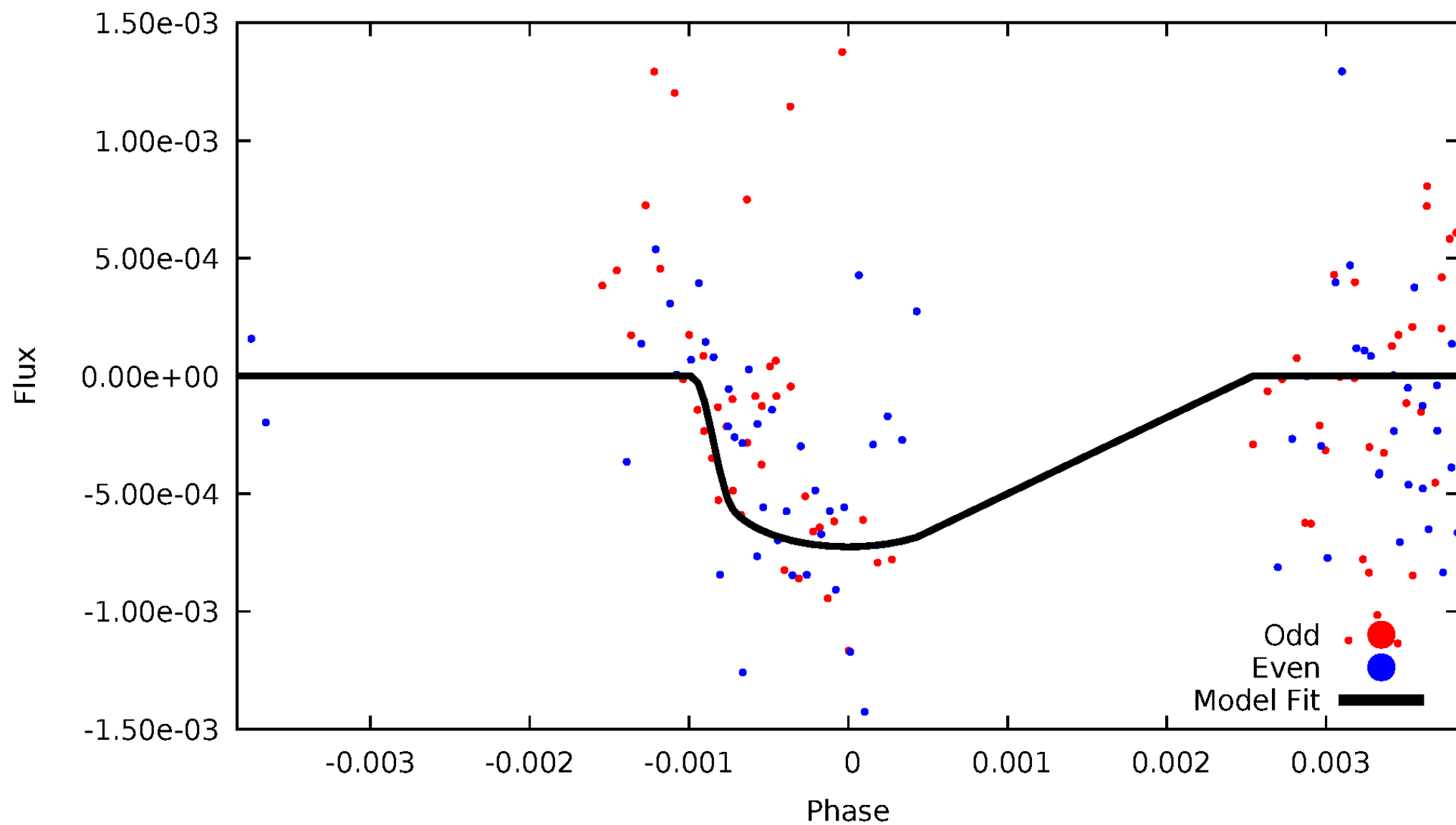


TCE 012217824-03



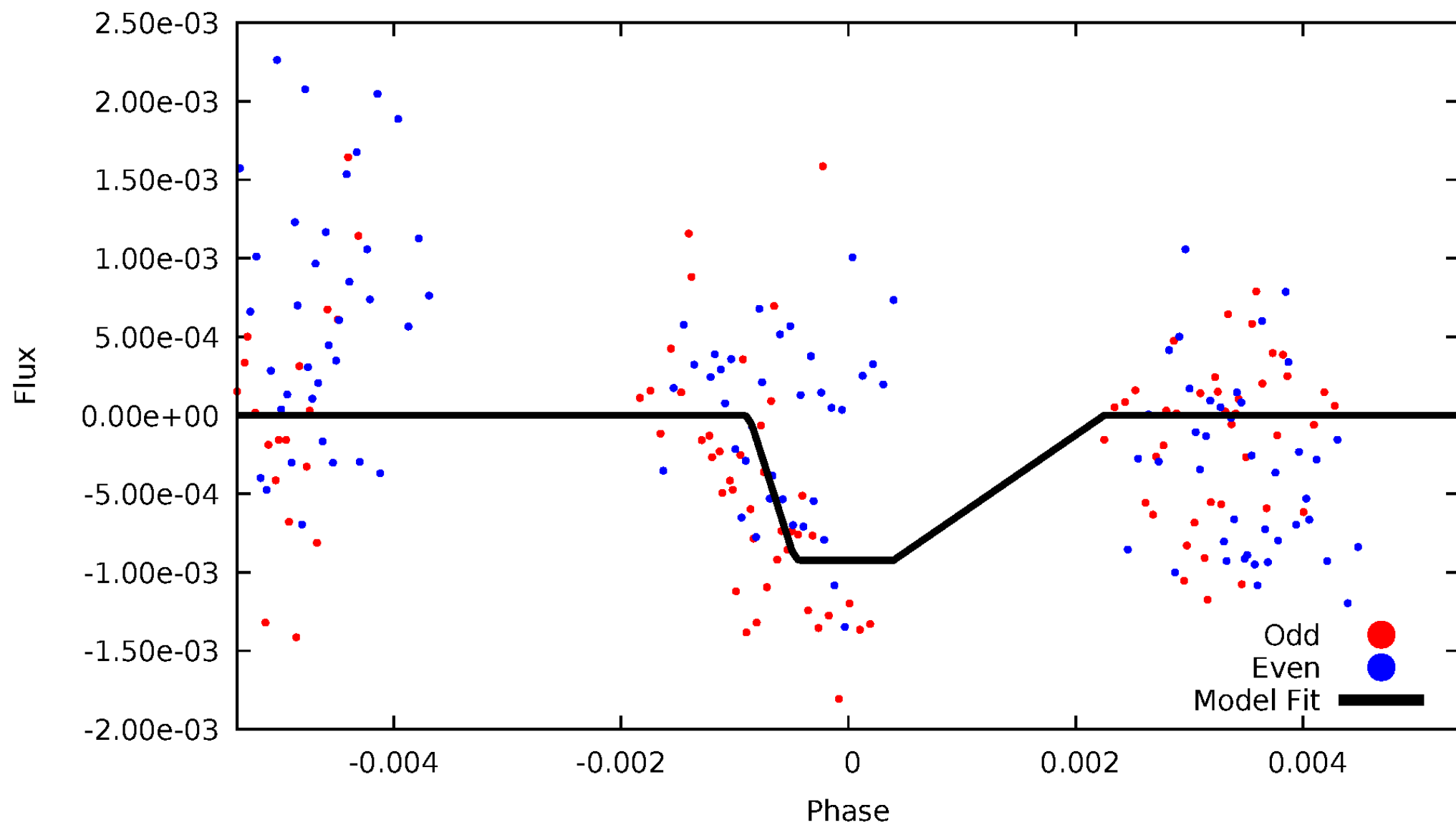
DV Odd/Even

TCE 012217824-03



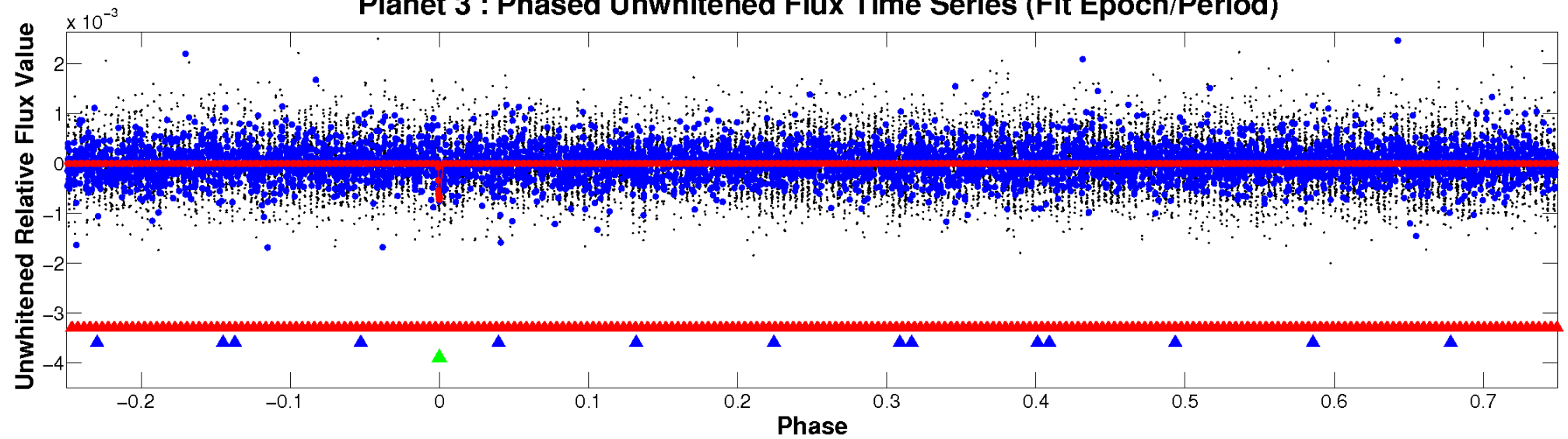
ALT Odd/Even

TCE 012217824-03

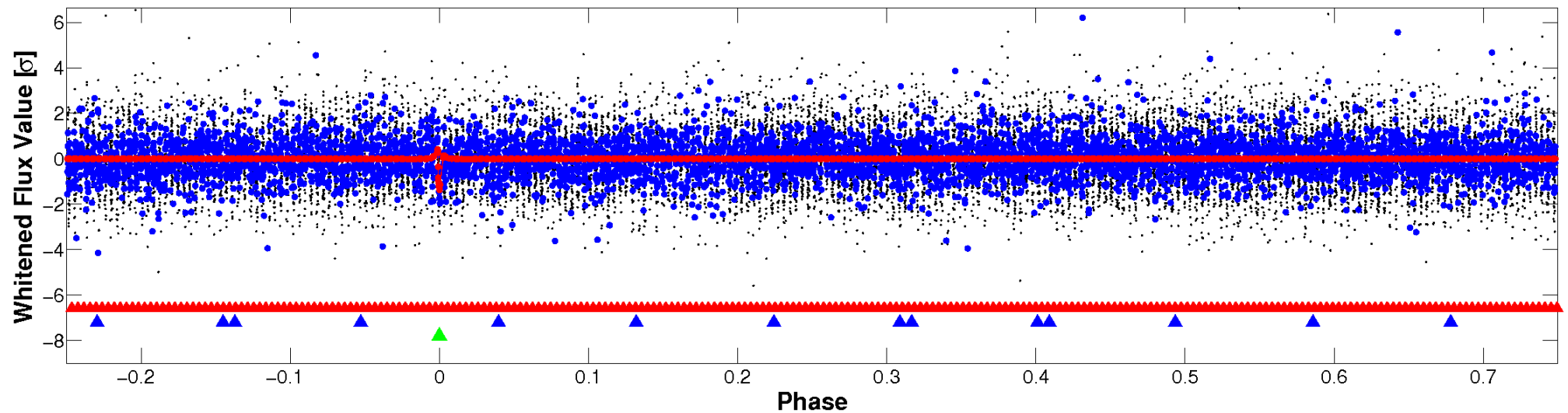


Non-Whitened Vs. Whitened Light Curve

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

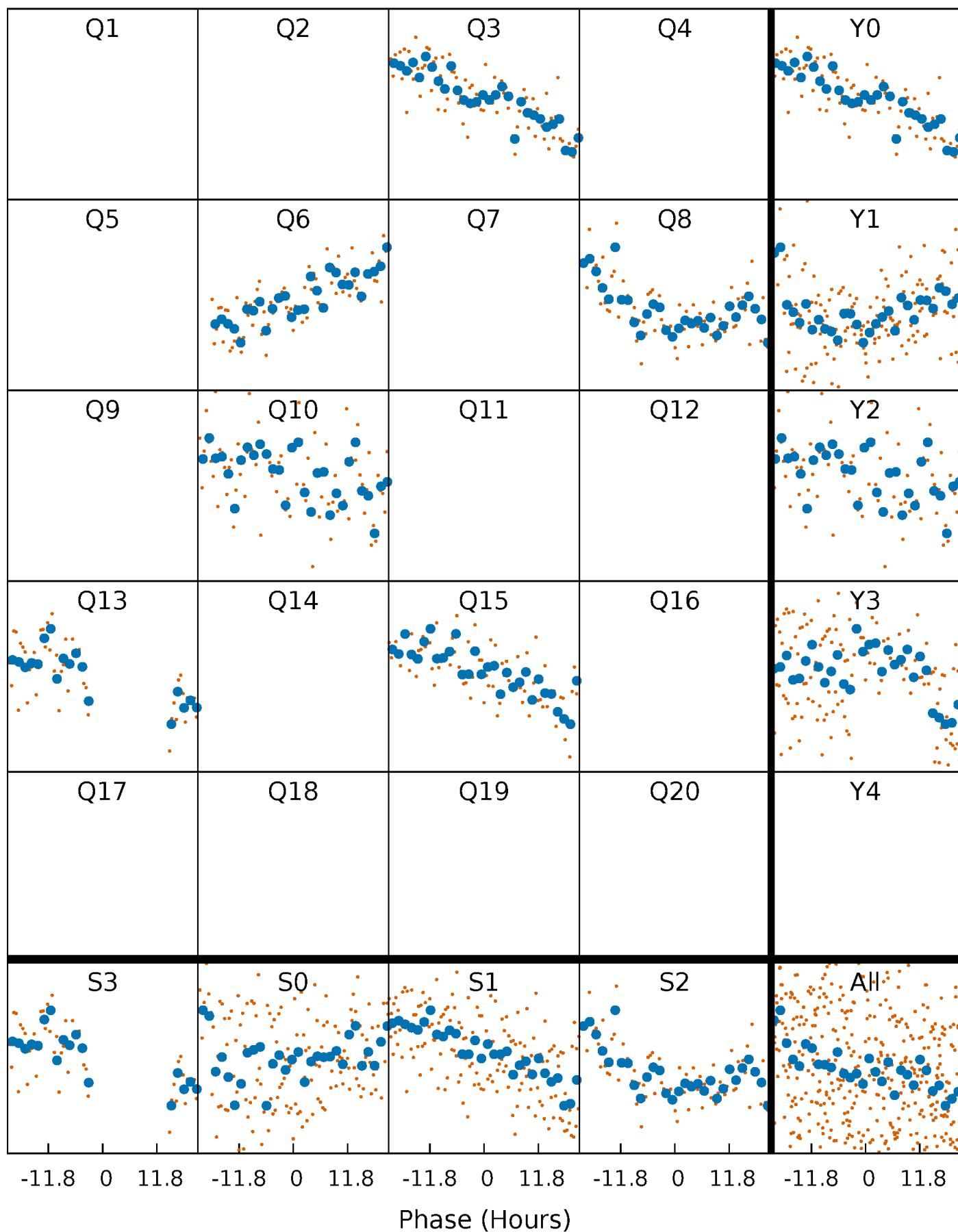


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



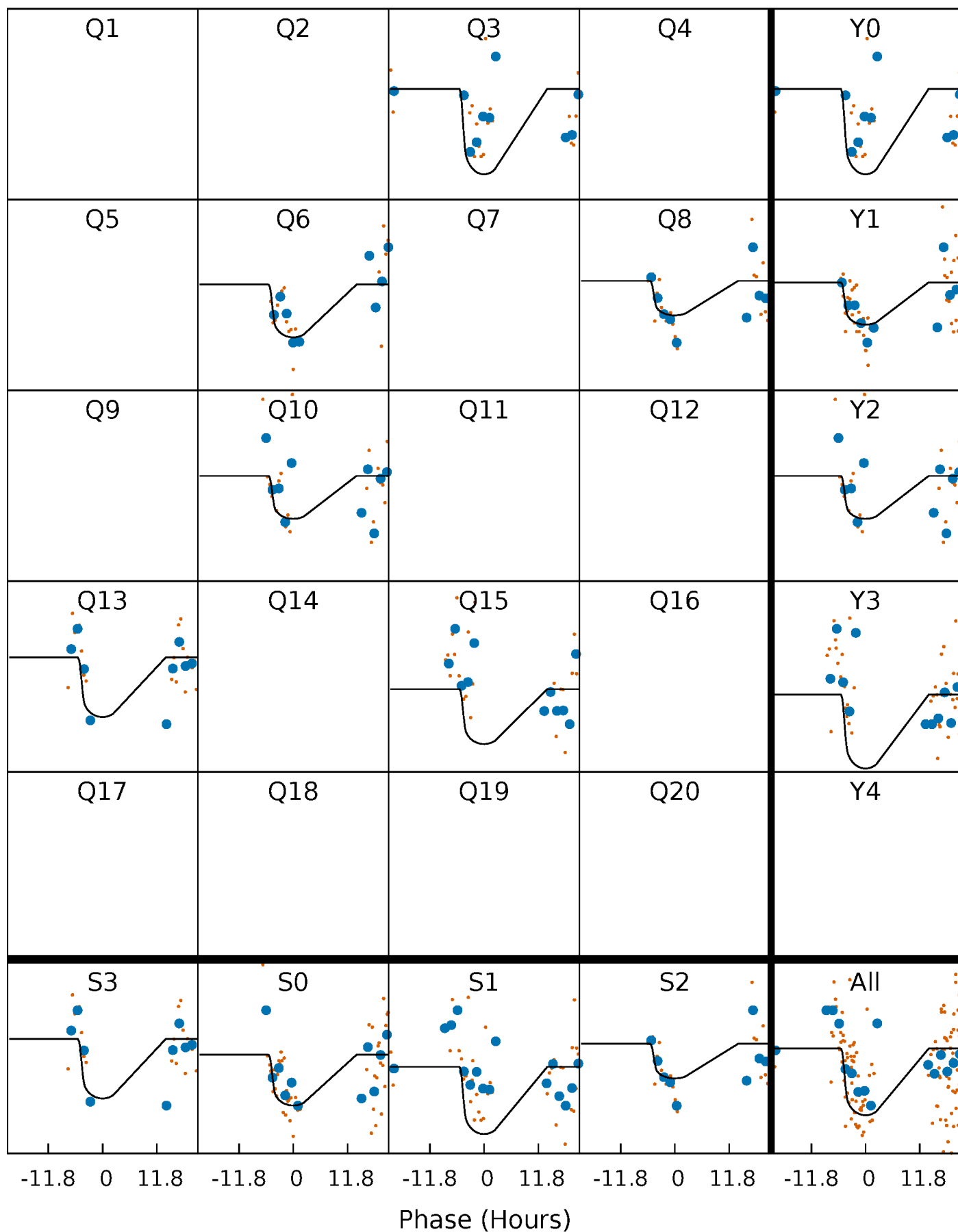
PDC Quarter-Phased Transit Curves

TCE 012217824-03 P=224.968674 Days $T_0=315.236159$ (BKJD)



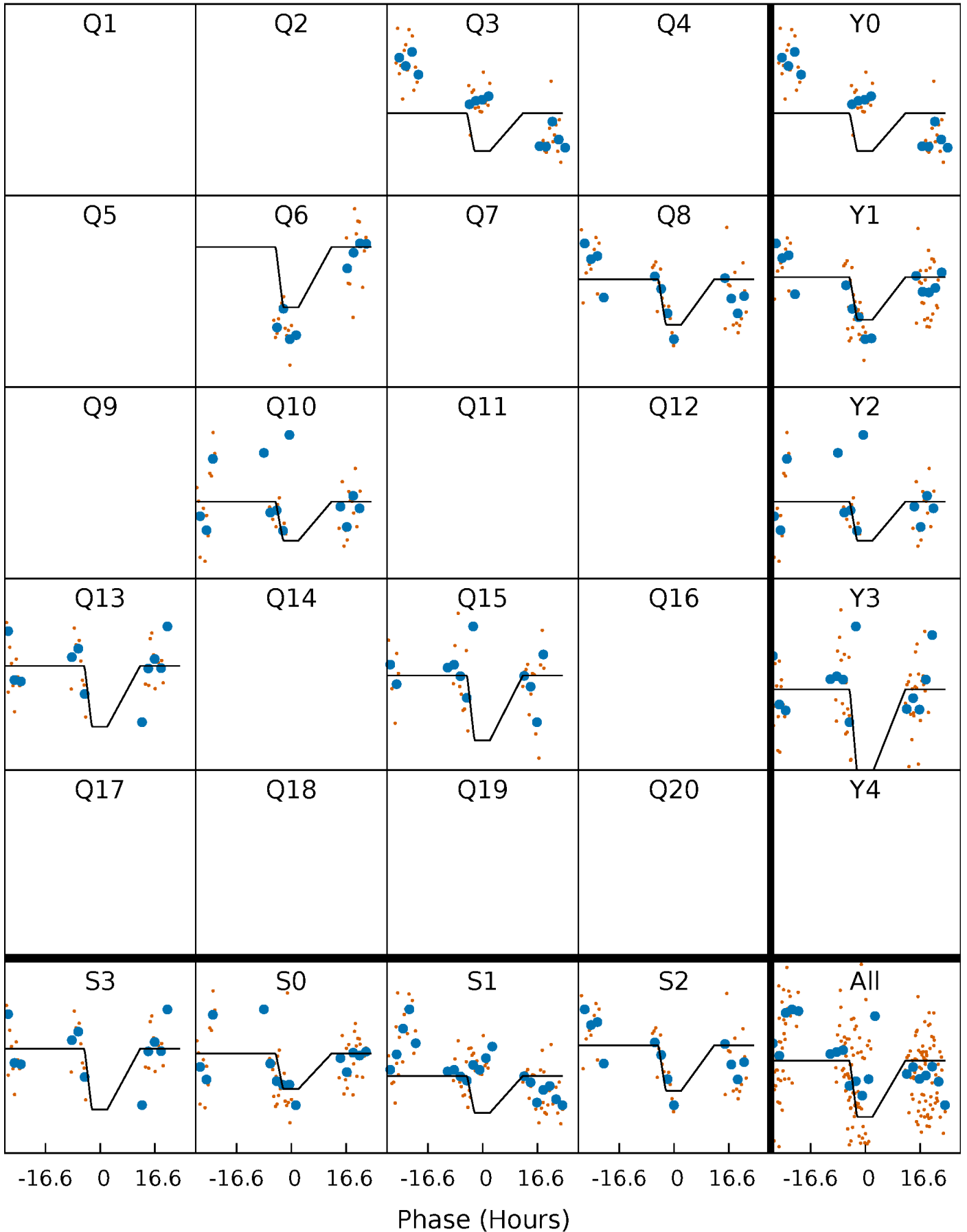
DV Quarter-Phased Transit Curves

TCE 012217824-03 P=224.968674 Days $T_0=315.236159$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

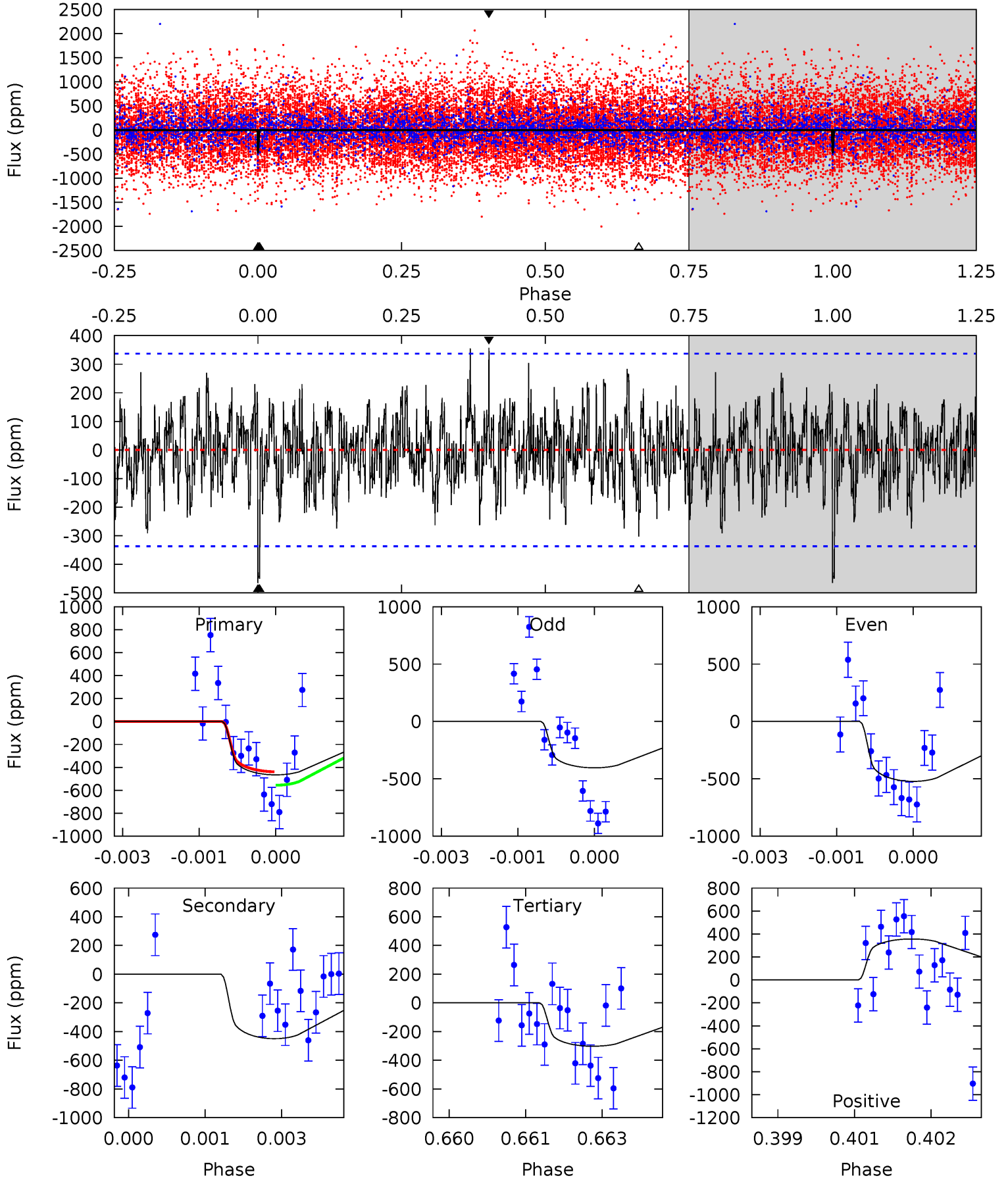
TCE 012217824-03 $P=224.980307$ Days $T_0=315.243124$ (BKJD)



DV Model-Shift Uniqueness Test

012217824-03, P = 224.968674 Days, E = 90.267485 Days

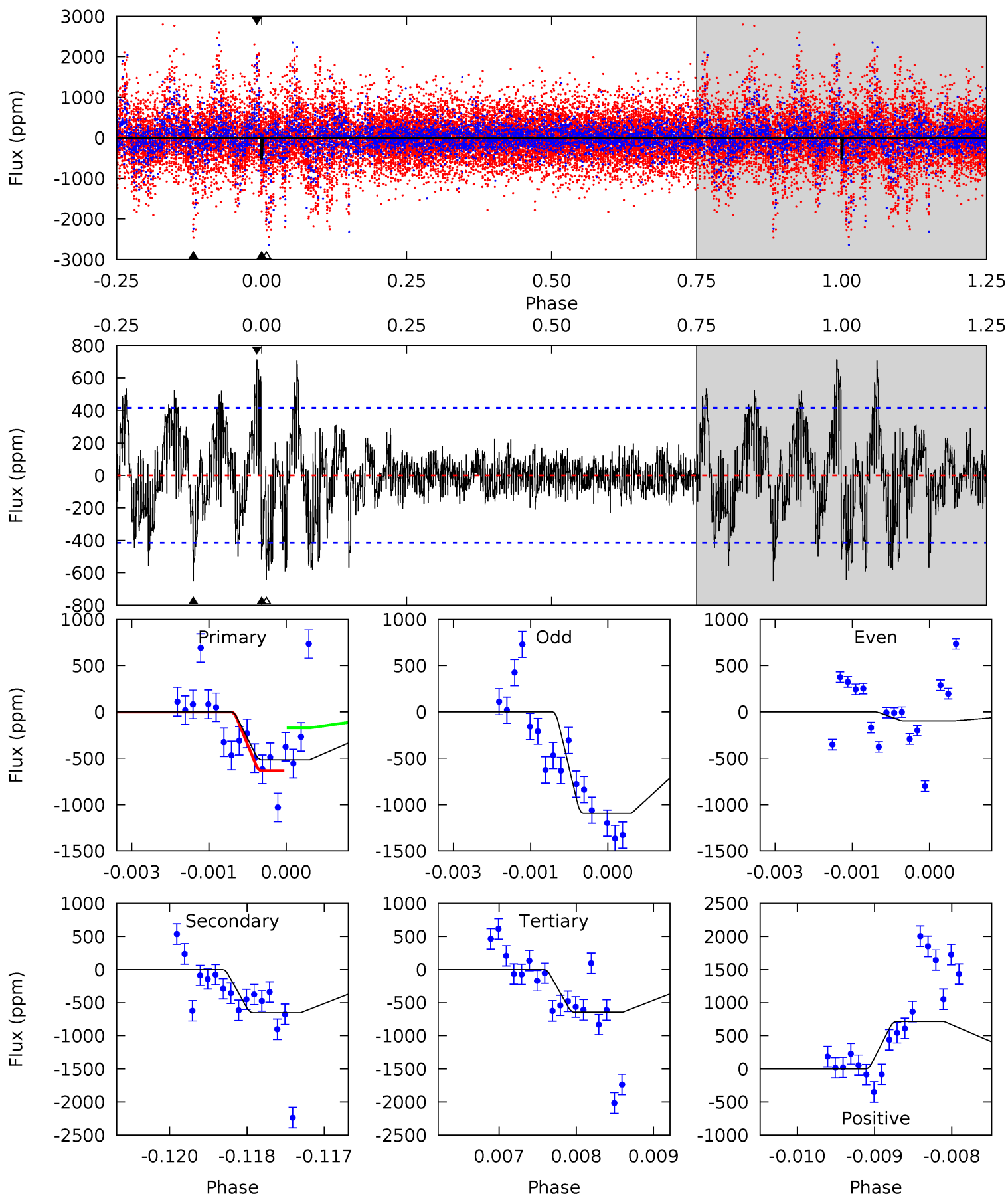
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.44	7.19	4.83	5.71	5.39	3.19	1.55	2.61	1.74	2.35	1.48	0.95	0.90	0.43	0.71



Alt Model-Shift Uniqueness Test

012217824-03, P = 224.980307 Days, E = 90.262817 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.74	8.49	8.41	9.30	5.40	3.22	1.87	-1.67	-2.56	0.07	-0.81	6.41	2.11	0.52	2.17



Stellar Parameters For KIC 012217824

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5889^{+159}_{-177}	$4.547^{+0.036}_{-0.204}$	$-0.240^{+0.300}_{-0.300}$	$0.861^{+0.246}_{-0.082}$	$0.952^{+0.109}_{-0.120}$	$2.101^{+0.408}_{-1.062}$
	+3%/-3%	+1%/-4%	+125%/-125%	+29%/-10%	+11%/-13%	+19%/-51%
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 012217824-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-450 ± 63	$2.81^{+0.59}_{-0.57}$	410^{+27}_{-19}	5165^{+473}_{-393}	15539^{+8771}_{-5252}
Alt.	-651 ± 77	$3.01^{+0.66}_{-0.56}$	409^{+28}_{-18}	5412^{+518}_{-408}	19703^{+9221}_{-6499}

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

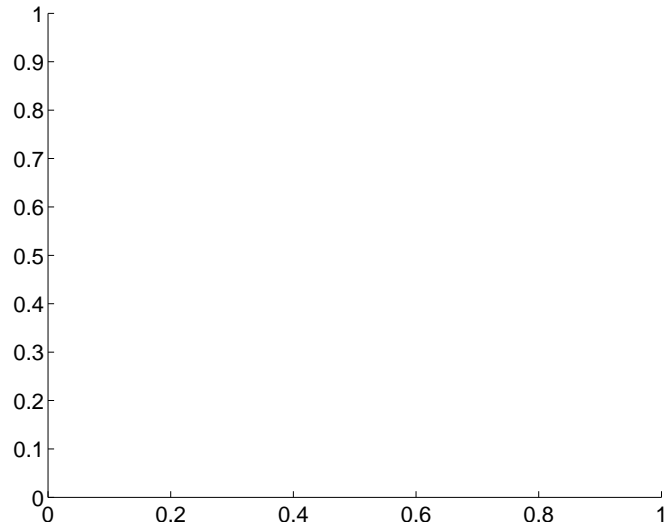
Supplemental centroid analysis for 012217824-03. Kepler magnitude: 15.11. Transit SNR 8.28

There are 0 quarters with good PRF difference image offsets

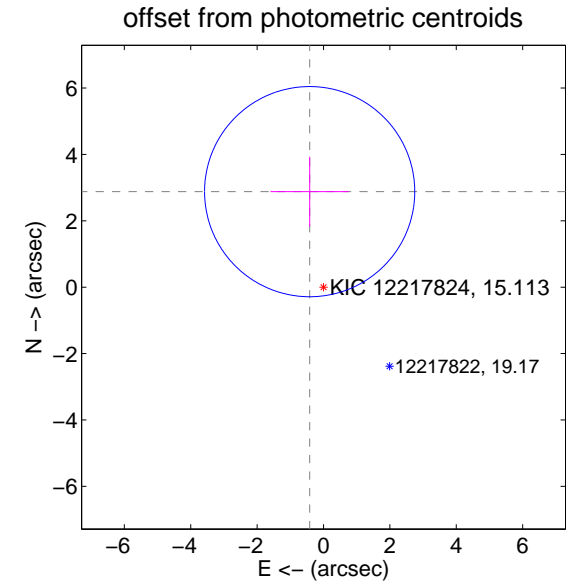
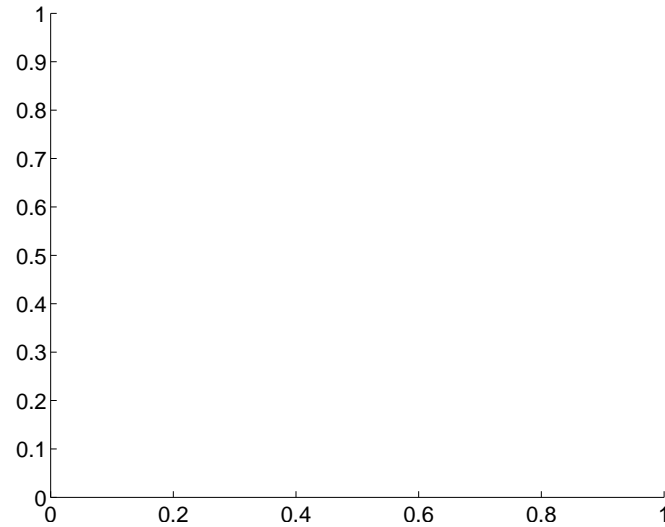
The direct PRF centroid is offset from the target star catalog position by about NaN arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	—	—	—	—
PRF-fit source offset from KIC position	—	—	—	—
photometric centroid source offset	2.91 ± 1.05	2.76	0.42 ± 1.18	2.88 ± 1.05

There is no PRF-fit offset from OOT-fit

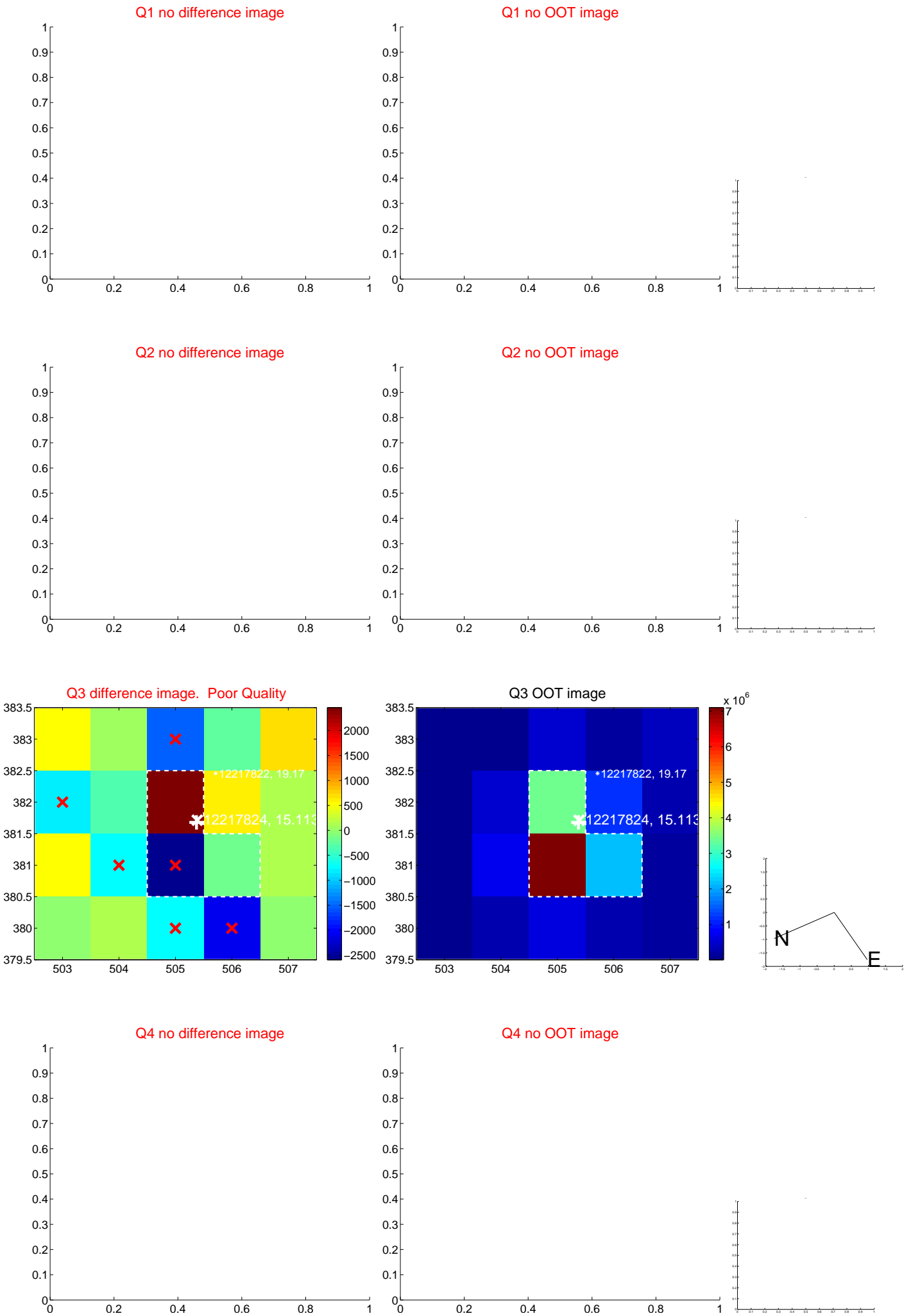


There is no PRF-fit offset from KIC

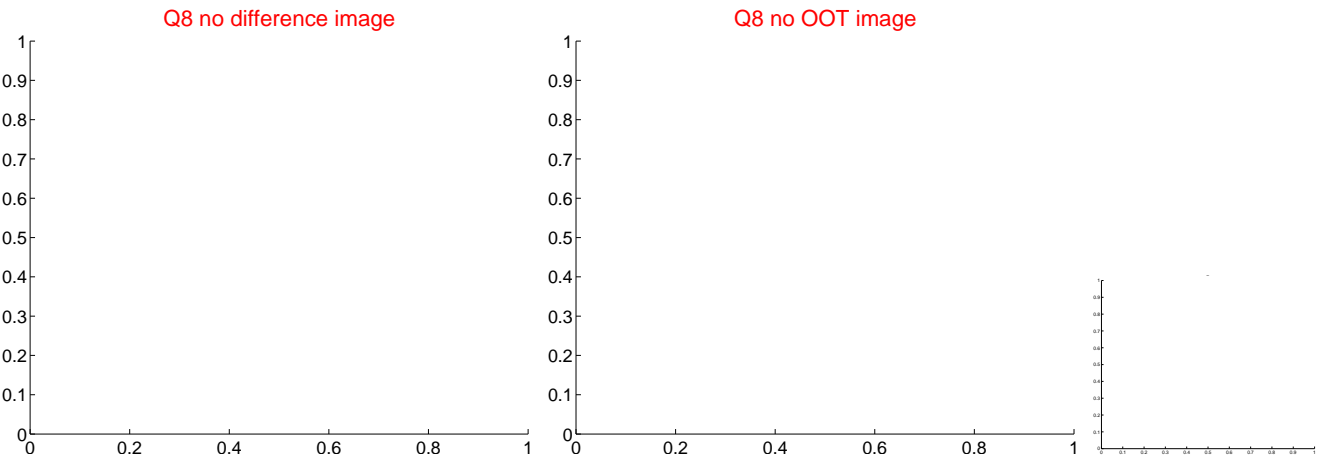
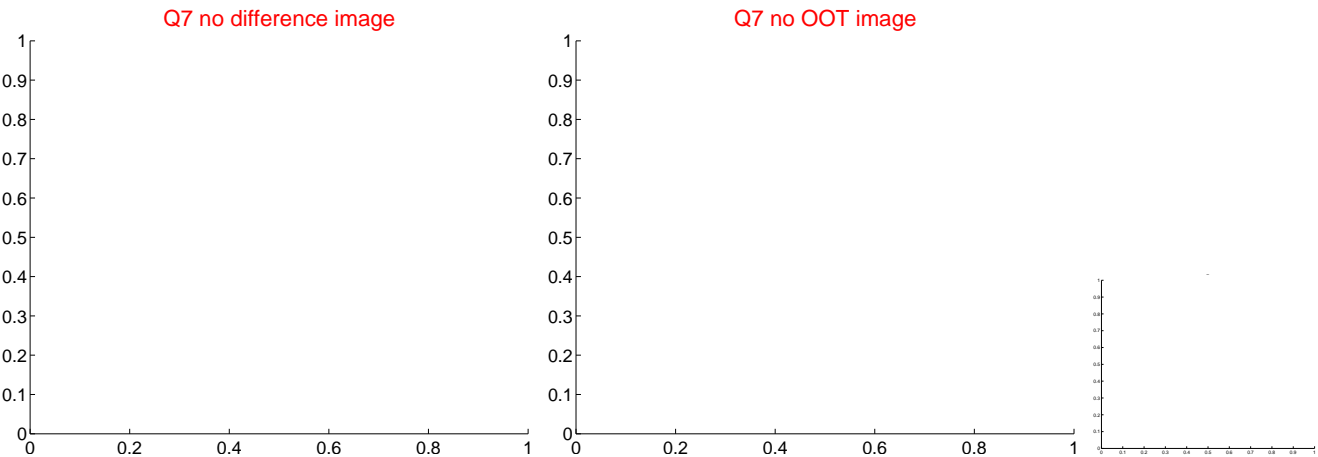
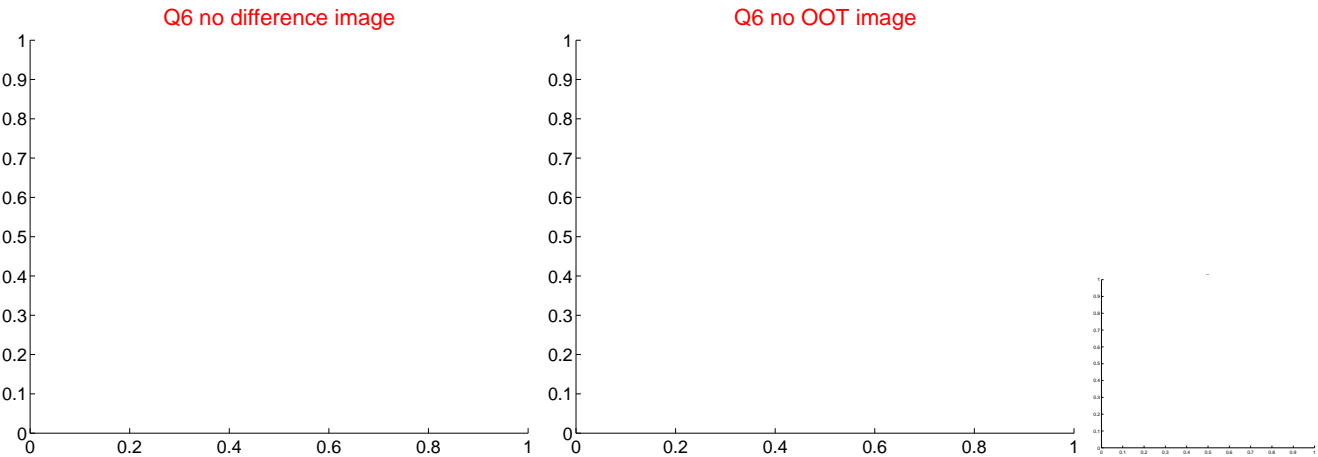
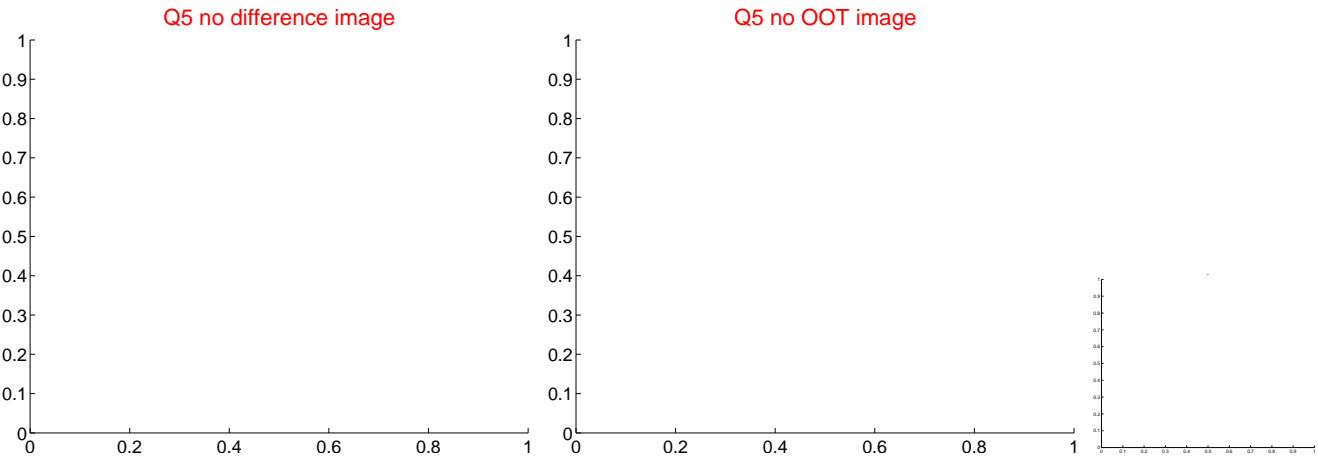


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

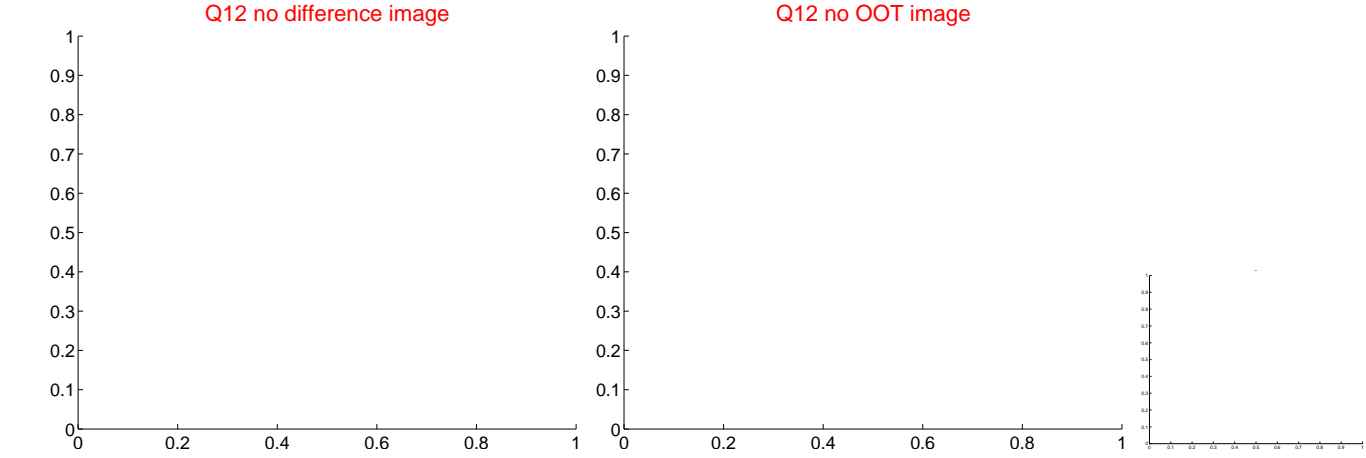
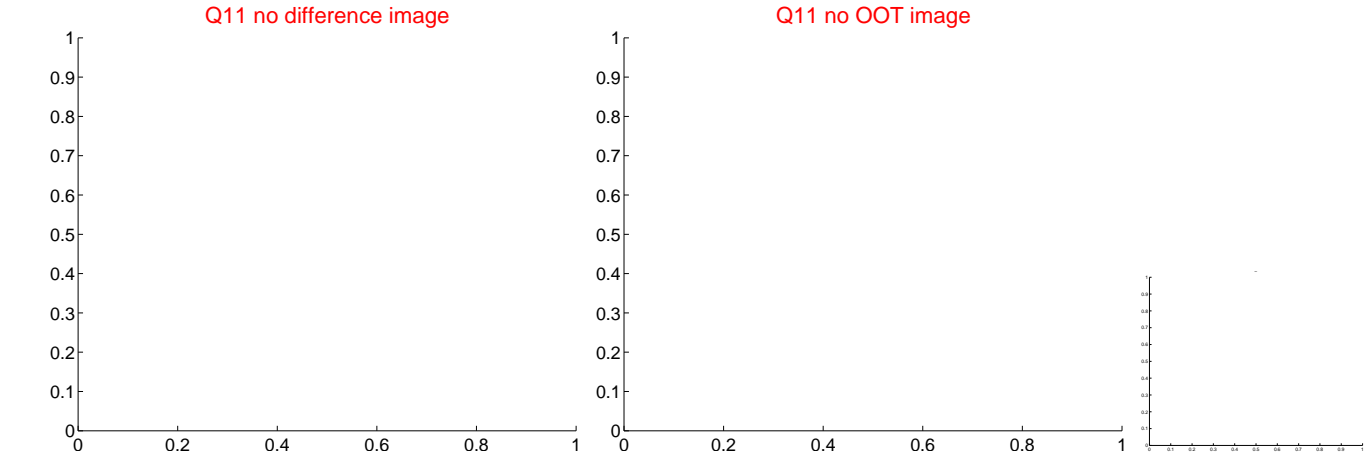
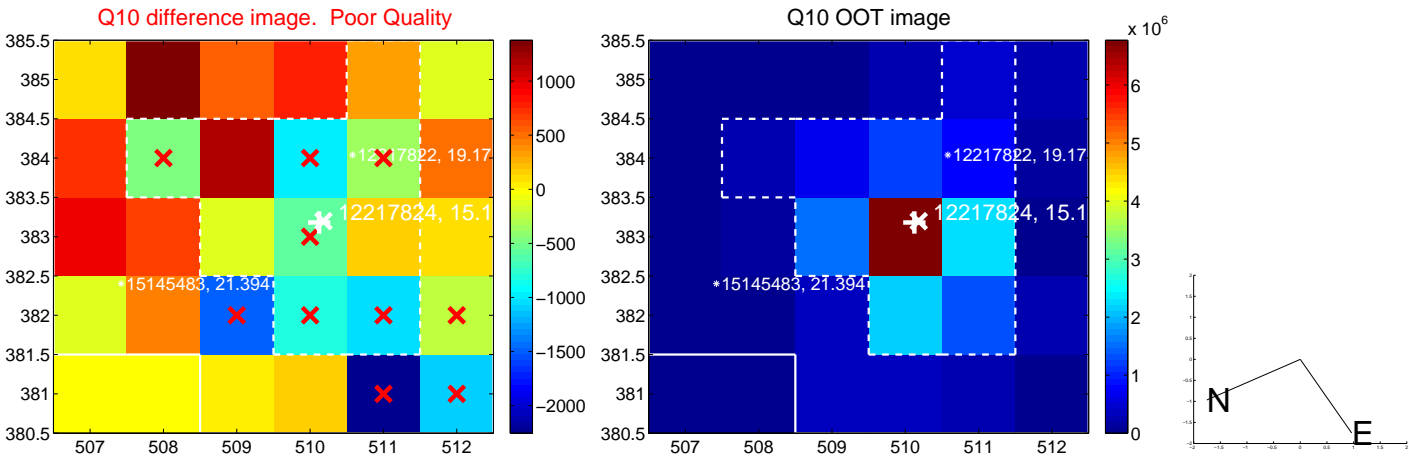
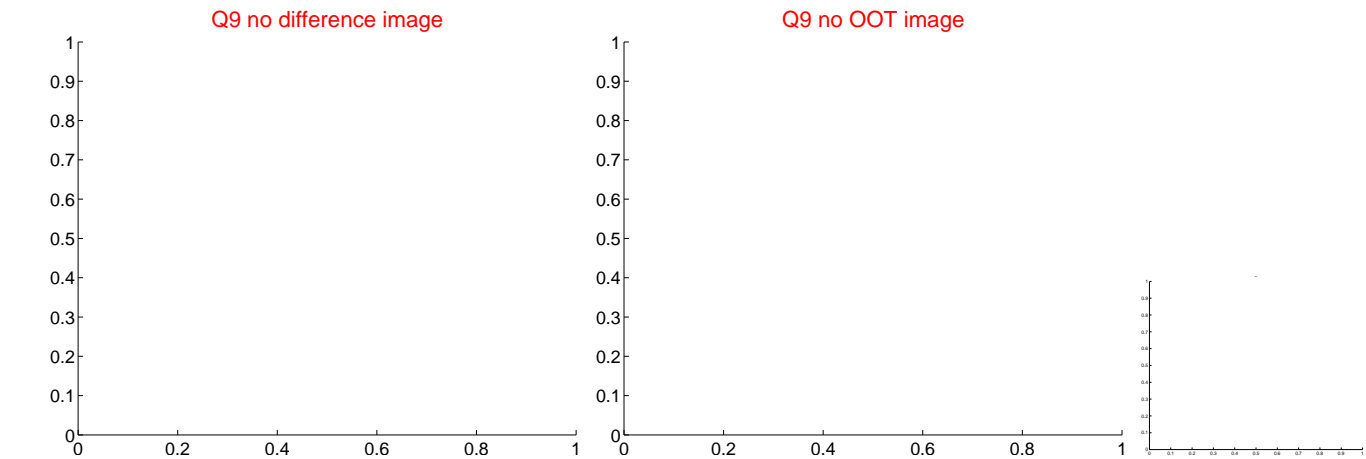
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



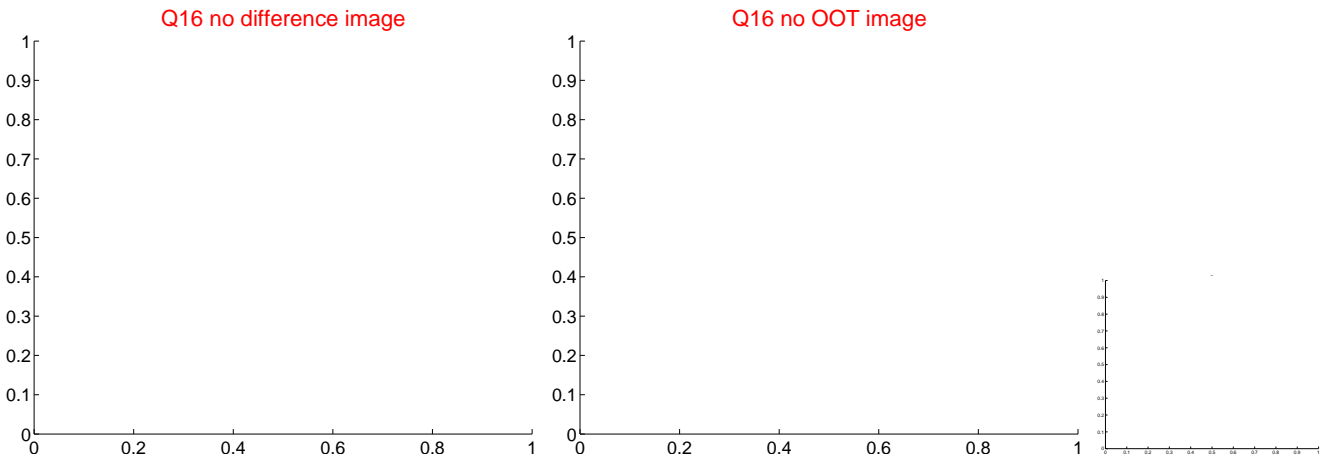
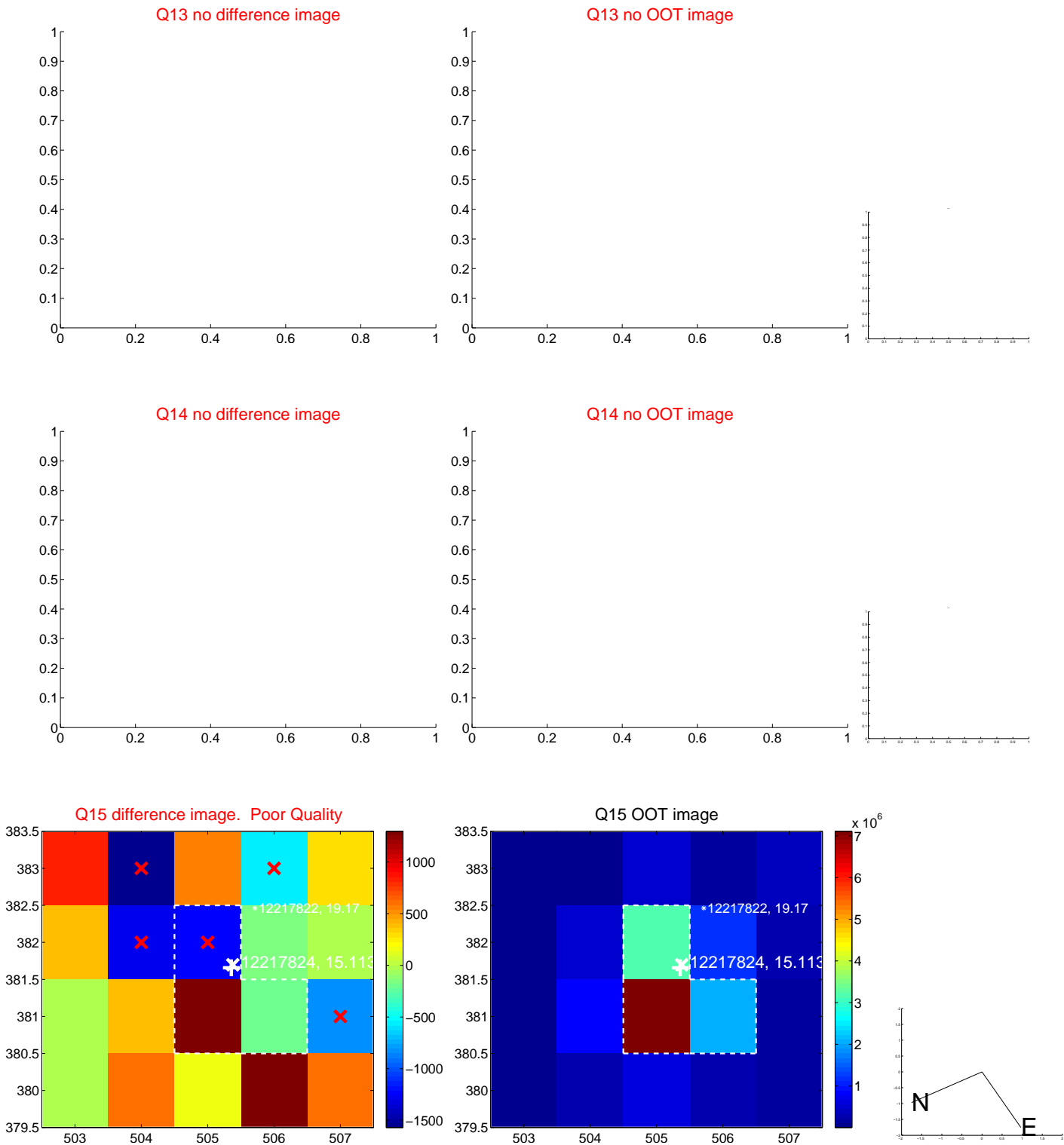
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



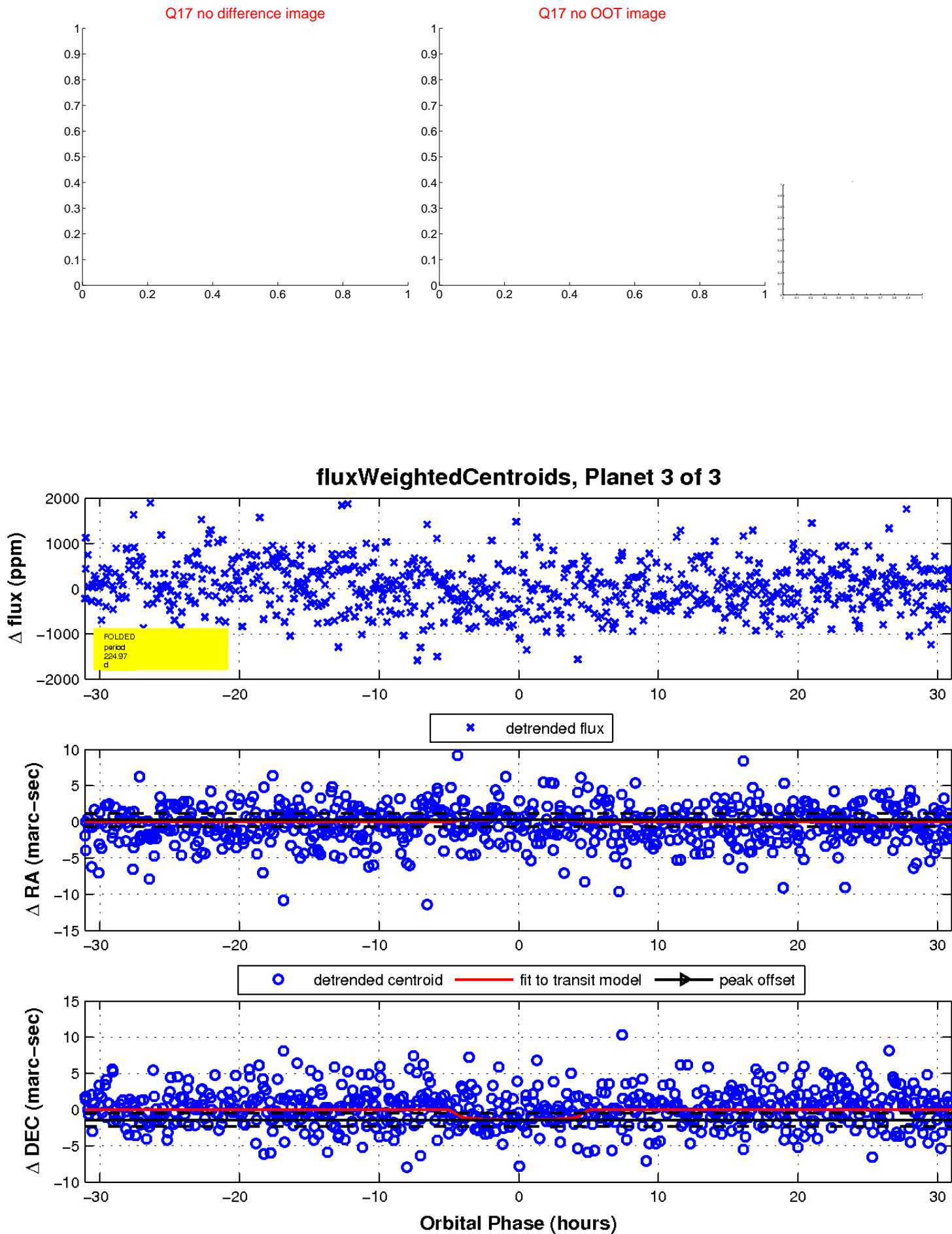
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



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



UKIRT Image

Declination

