

KIC 010272747

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})
010272747-01	OBS	No	4.261915	133.381147	26.2	12.297	11.2	7.7	1.99	7313	1.18	2991.82
010272747-02	OBS	No	4.261801	135.460223	25.5	14.933	9.9	8.3	1.99	7313	1.17	2991.93
010272747-03	OBS	No	127.293919	230.783382	193.7	20.159	9.7	6.7	1.99	7313	3.02	32.28
010272747-04	OBS	No	12.785563	141.318636	167.8	27.321	8.7	12.7	1.99	7313	5.00	691.48

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010272747-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—MOD_NONUNIQ_DV—CENT_KIC_POS
010272747-02	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_KIC_POS
010272747-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
010272747-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_KIC_POS

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

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

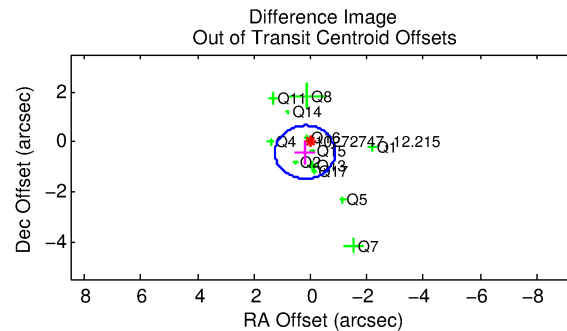
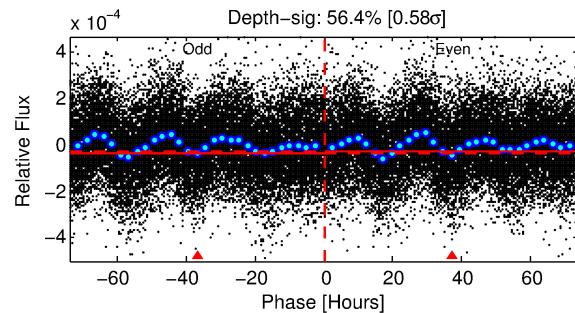
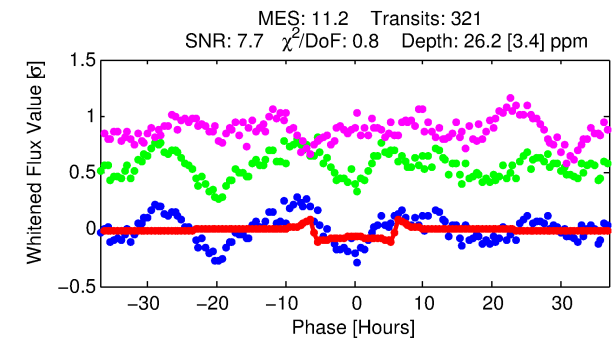
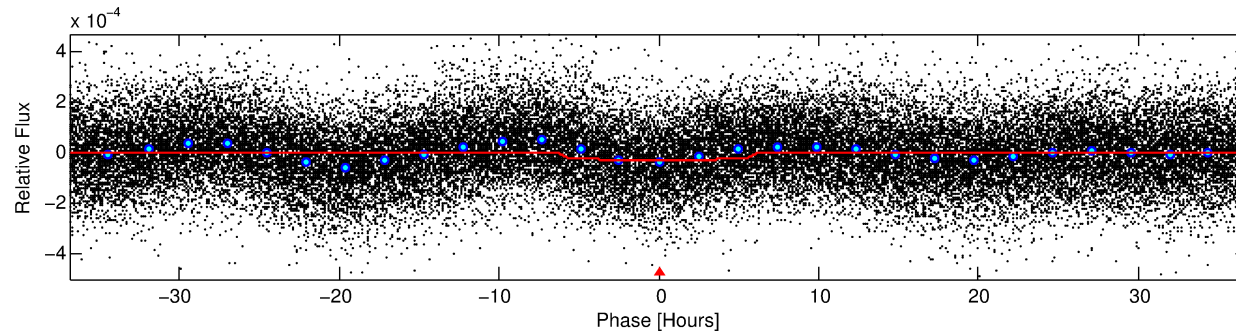
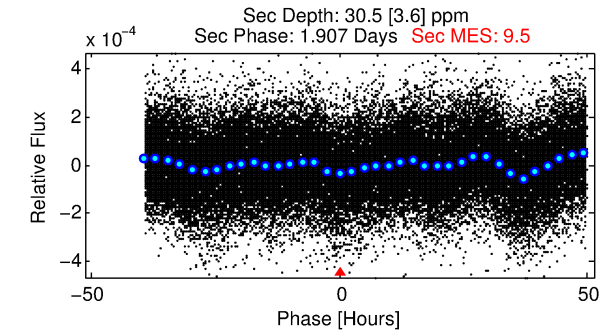
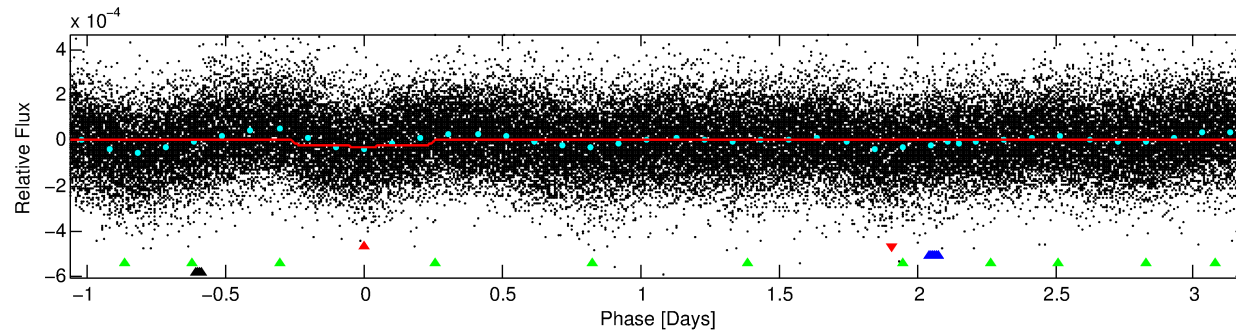
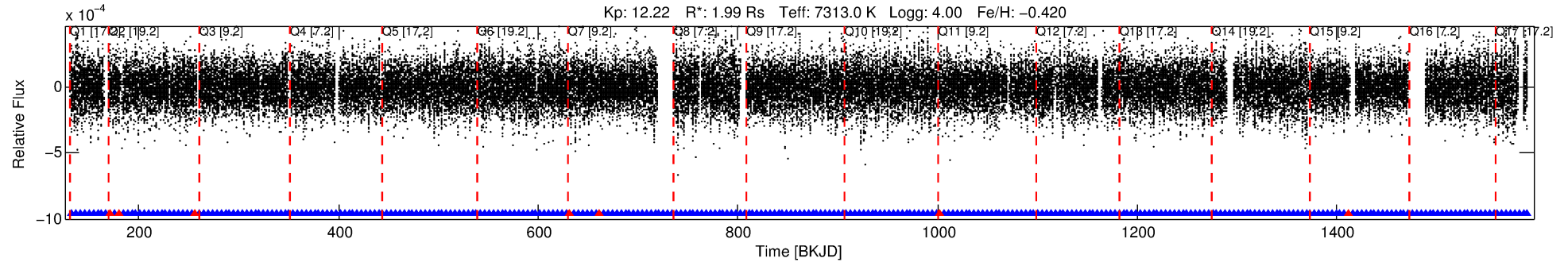
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010272747-01

No Significant Match Found

DV One-Page Summary

KIC: 10272747 Candidate: 1 of 4 Period: 4.262 d



DV Fit Results:

Period = 4.26192 [0.00004] d
Epoch = 133.3811 [0.0059] BKJD
Rp/R* = 0.0054 [0.0006]
a/R* = 1.51 [0.46]
b = 0.90 [0.12]
Seff = 2991.82 [1630.92]
Teq = 1886 [257] K
Rp = 1.18 [0.44] Re
a = 0.0582 [0.0192] AU
Ag = 40.82 [23.58] [1.69σ]
Teffp = 7370 [562] K [8.88σ]

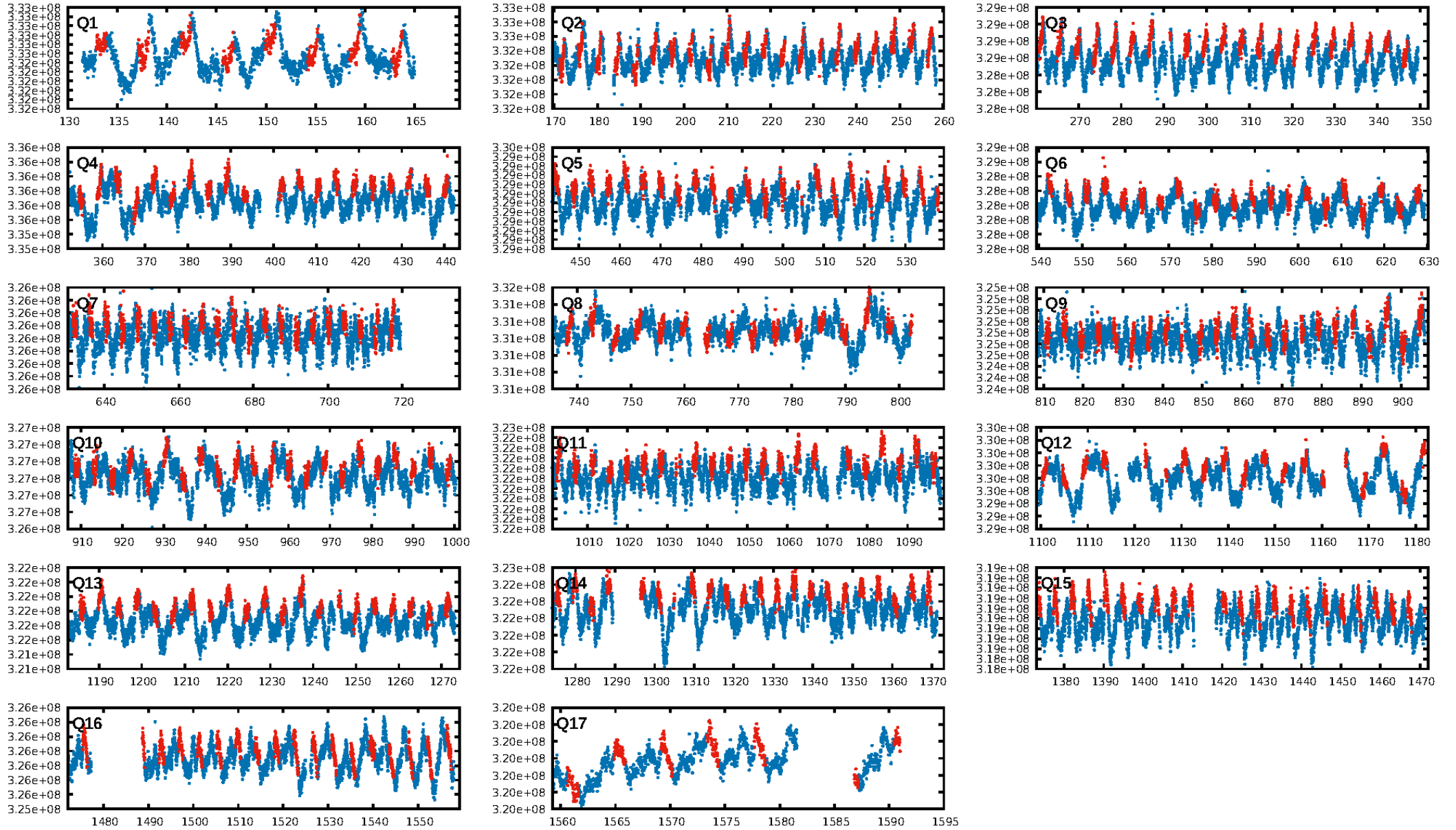
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: 100.0% [6.83σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 2.76e-15
RollingBand-fgt: 0.98 [299/306]
GhostDiagnostic-chr: 3.134
Centroid-sig: 1.3%
Centroid-so: 1.824 arcsec [1.53σ]
OotOffset-rm: 0.462 arcsec [1.30σ]
KicOffset-rm: 0.296 arcsec [0.61σ]
OotOffset-st: 2/3/3/4 [12]
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DiffImageQuality-fgm: 0.25 [3/12]
DiffImageOverlap-fno: 1.00 [17/17]

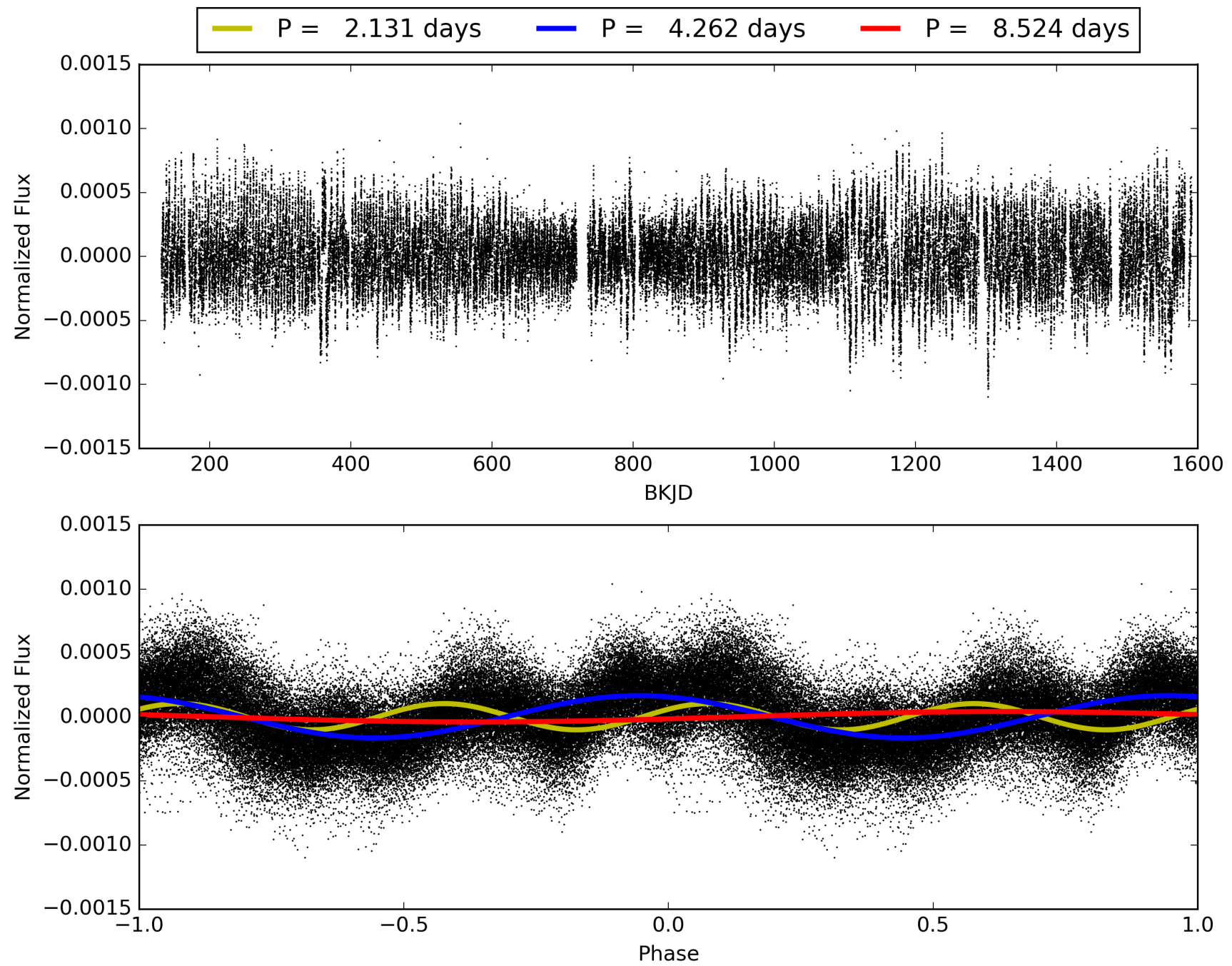
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 010272747-01, PDC Light Curves

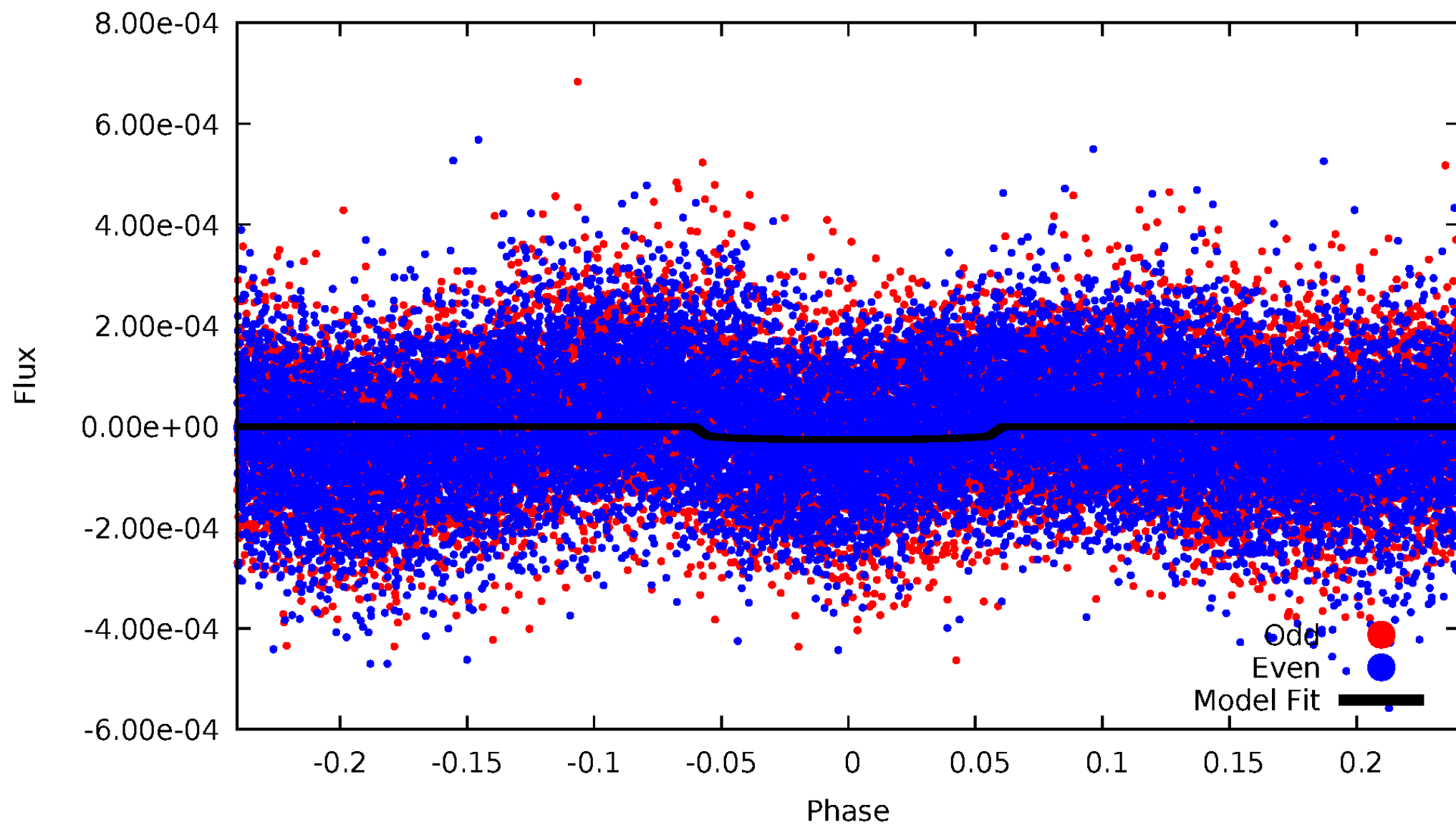


TCE 010272747-01



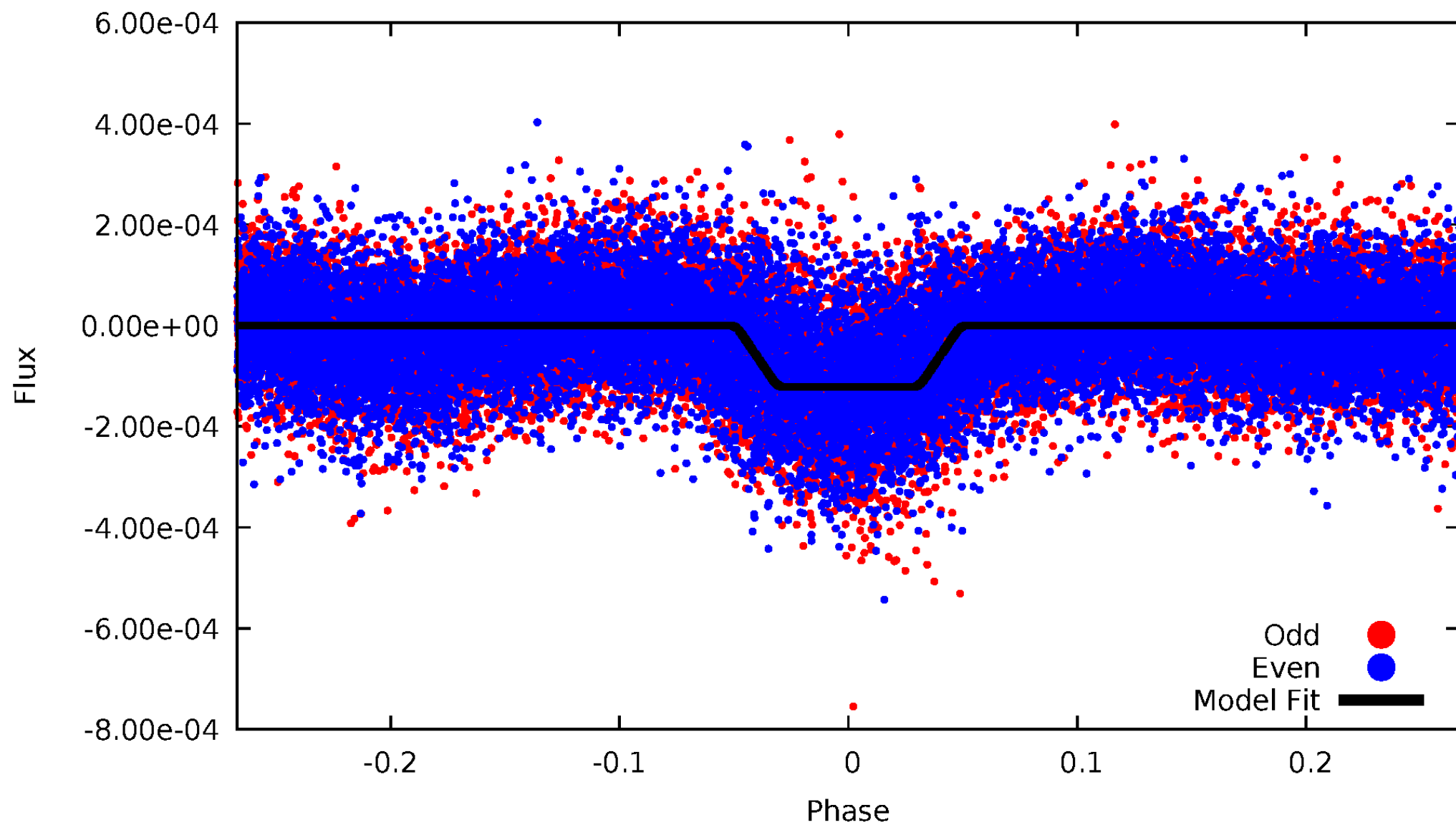
DV Odd/Even

TCE 010272747-01

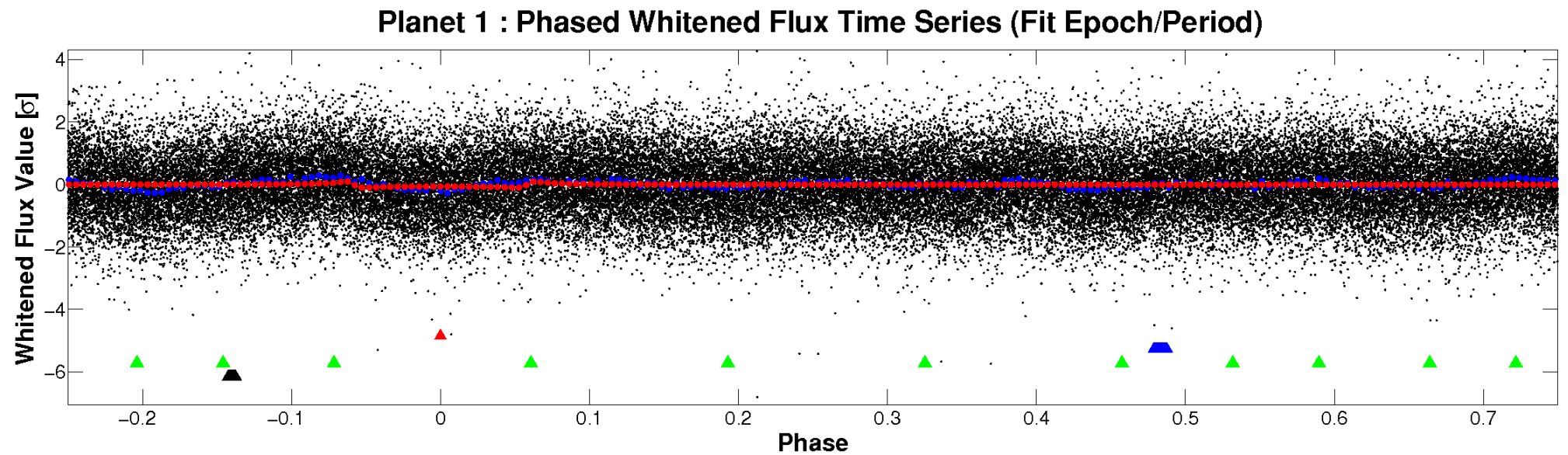
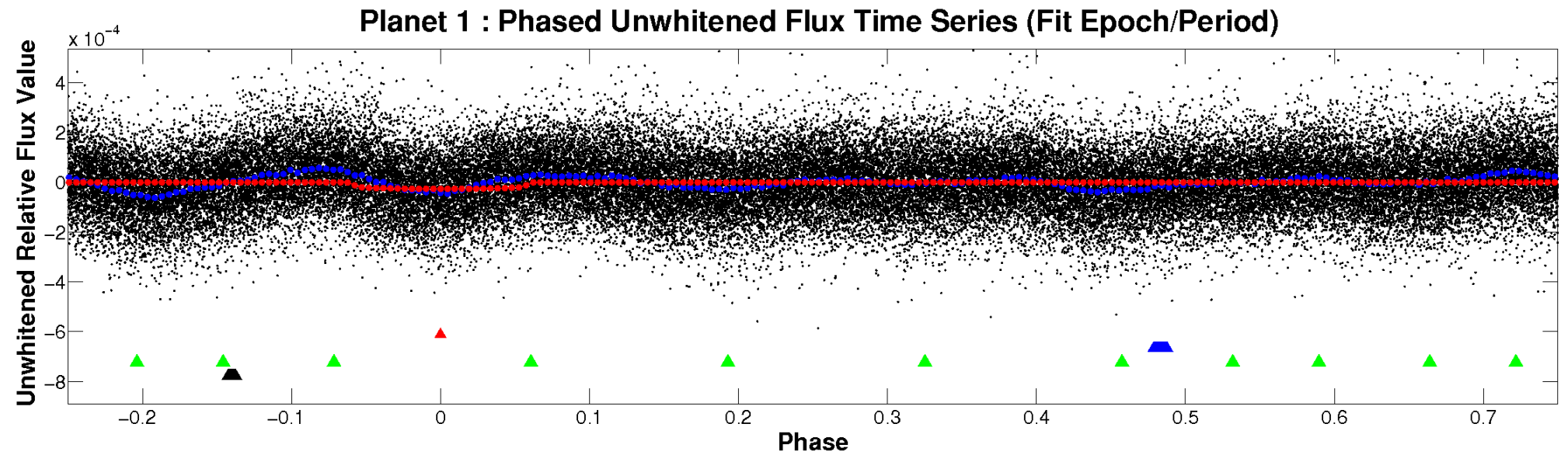


ALT Odd/Even

TCE 010272747-01

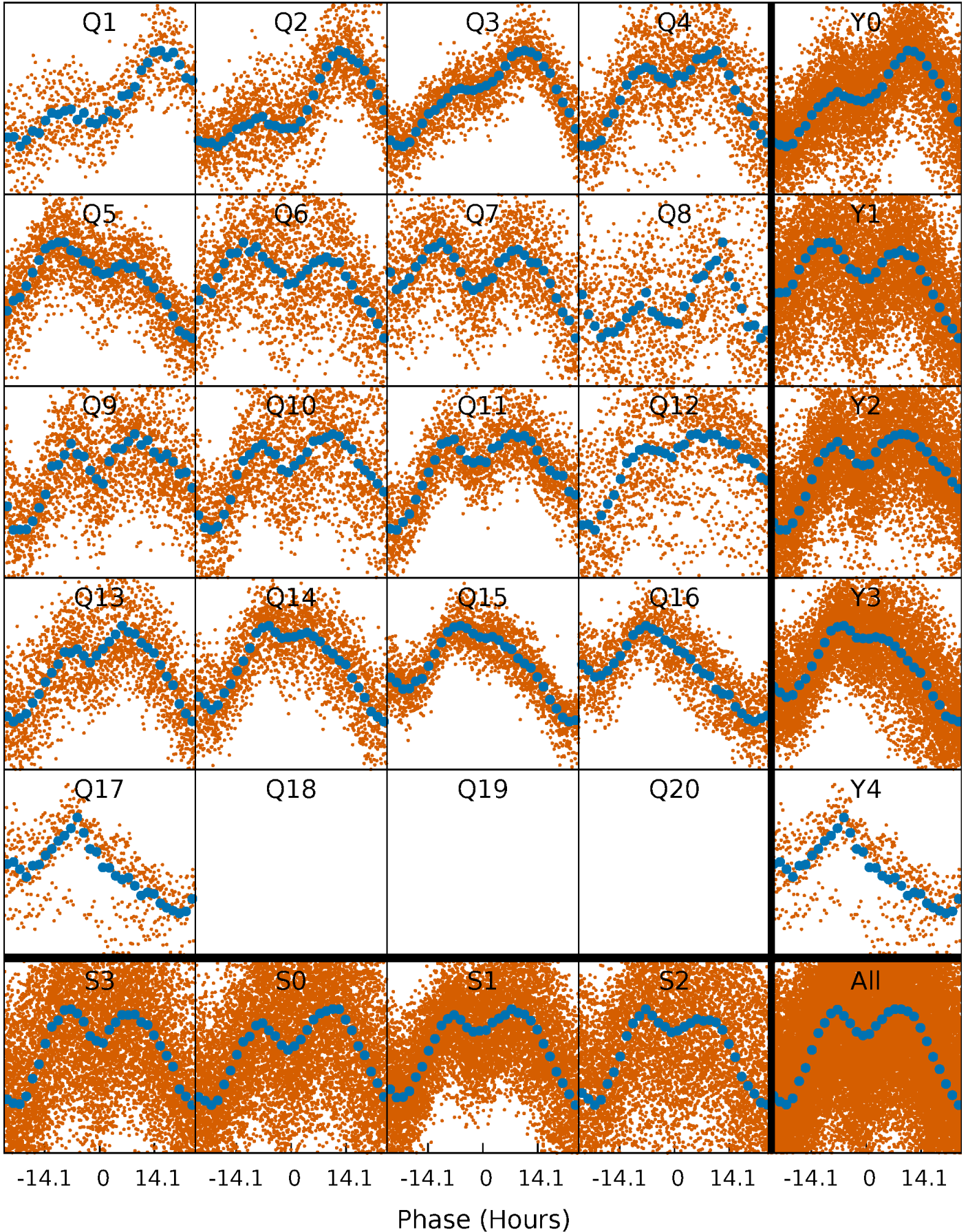


Non-Whitened Vs. Whitened Light Curve



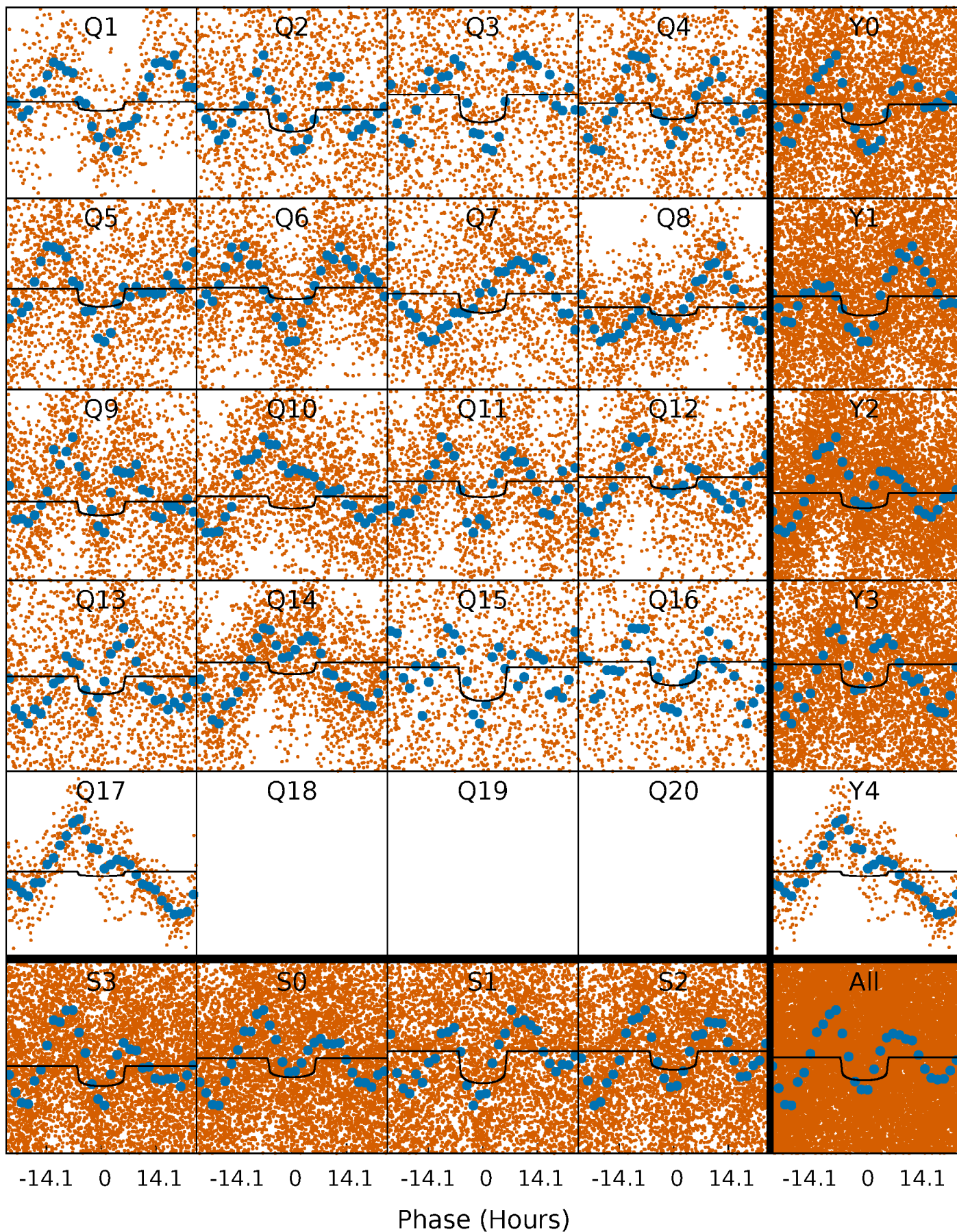
PDC Quarter-Phased Transit Curves

TCE 010272747-01 P= 4.261915 Days $T_0=133.381147$ (BKJD)



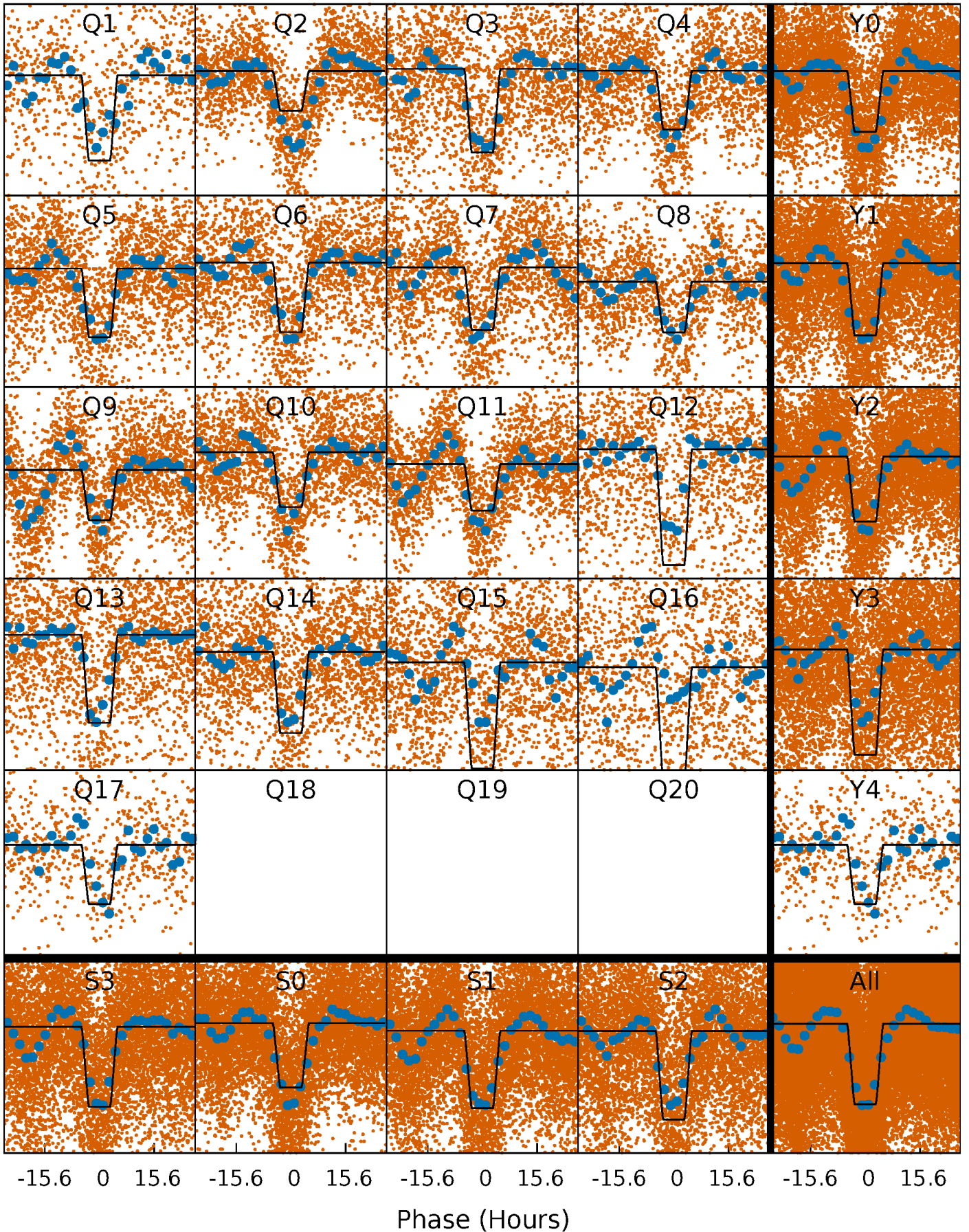
DV Quarter-Phased Transit Curves

TCE 010272747-01 P= 4.261915 Days $T_0=133.381147$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

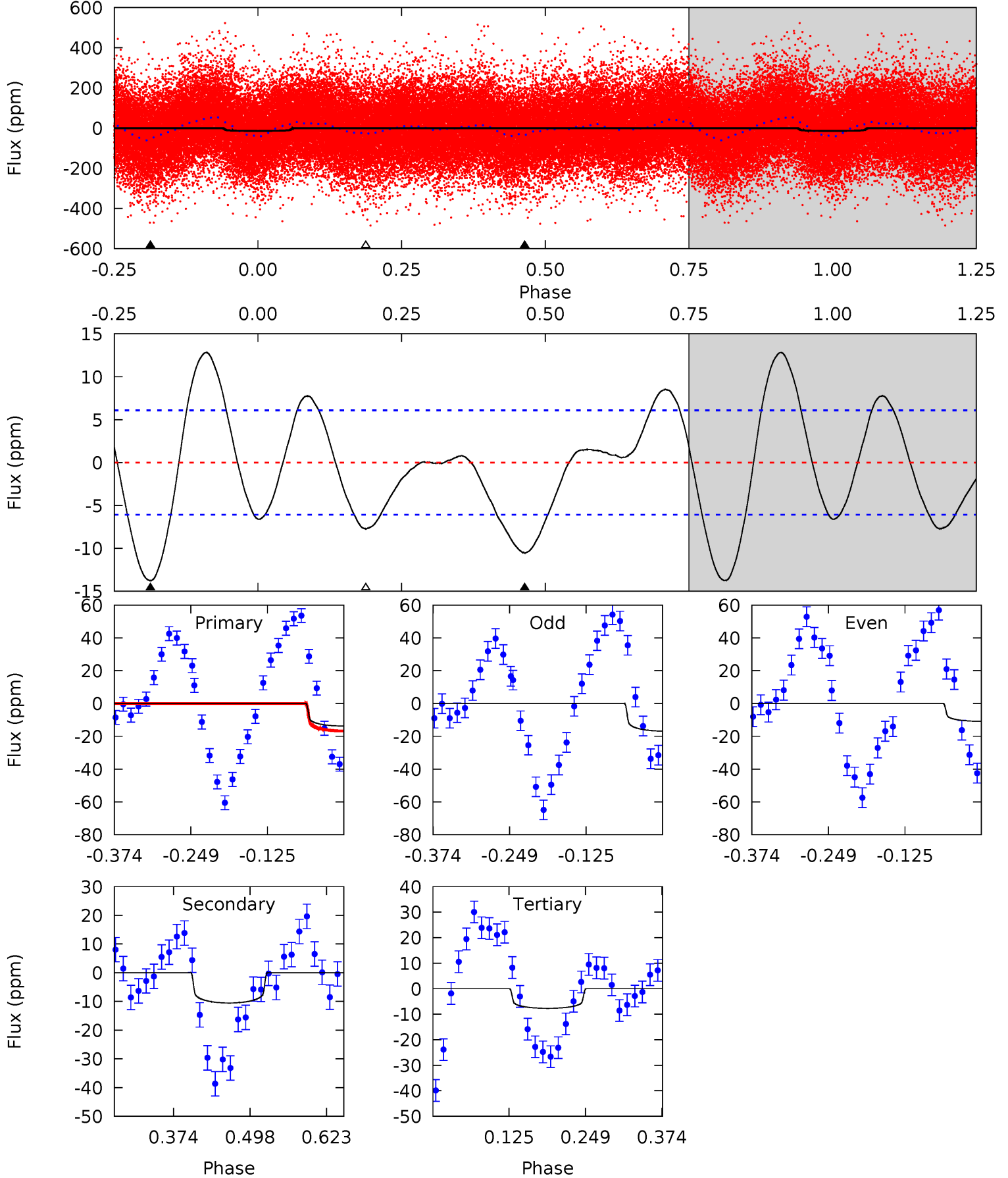
TCE 010272747-01 P= 4.261693 Days $T_0=133.405906$ (BKJD)



DV Model-Shift Uniqueness Test

010272747-01, P = 4.261915 Days, E = 129.119232 Days

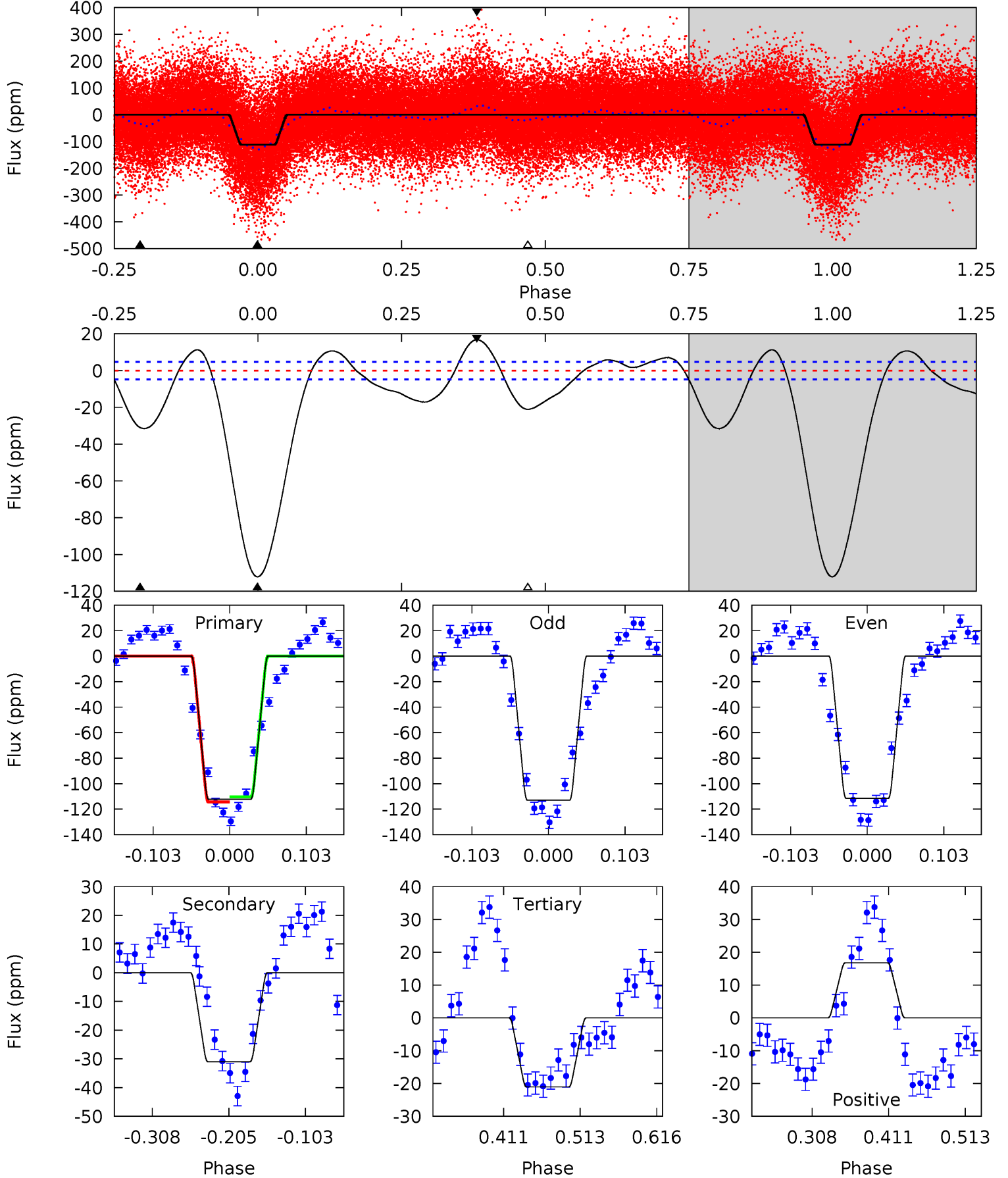
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.2	7.84	5.73	0	4.52	1.54	3.18	4.49	10.2	2.10	7.84	2.21	0.88	0.48	2.25



Alt Model-Shift Uniqueness Test

010272747-01, P = 4.261693 Days, E = 129.144213 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
106.6	29.4	20.0	16.0	4.56	1.63	9.72	86.6	90.6	9.42	13.5	0.69	1.01	0.13	1.88



Stellar Parameters For KIC 010272747

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	7313^{+205}_{-307}	$4.001^{+0.301}_{-0.150}$	$-0.420^{+0.250}_{-0.300}$	$1.987^{+0.468}_{-0.702}$	$1.444^{+0.193}_{-0.289}$	$0.259^{+0.536}_{-0.109}$
	+3%/-4%	+8%/-4%	+60%/-71%	+24%/-35%	+13%/-20%	+207%/-42%
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 010272747-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-11 ± 1	$1.15^{+0.22}_{-0.23}$	2591^{+221}_{-227}	5552^{+410}_{-332}	15^{+9}_{-5}
Alt.	-31 ± 1	$2.35^{+0.35}_{-0.47}$	2591^{+204}_{-235}	5138^{+210}_{-180}	10^{+5}_{-2}

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

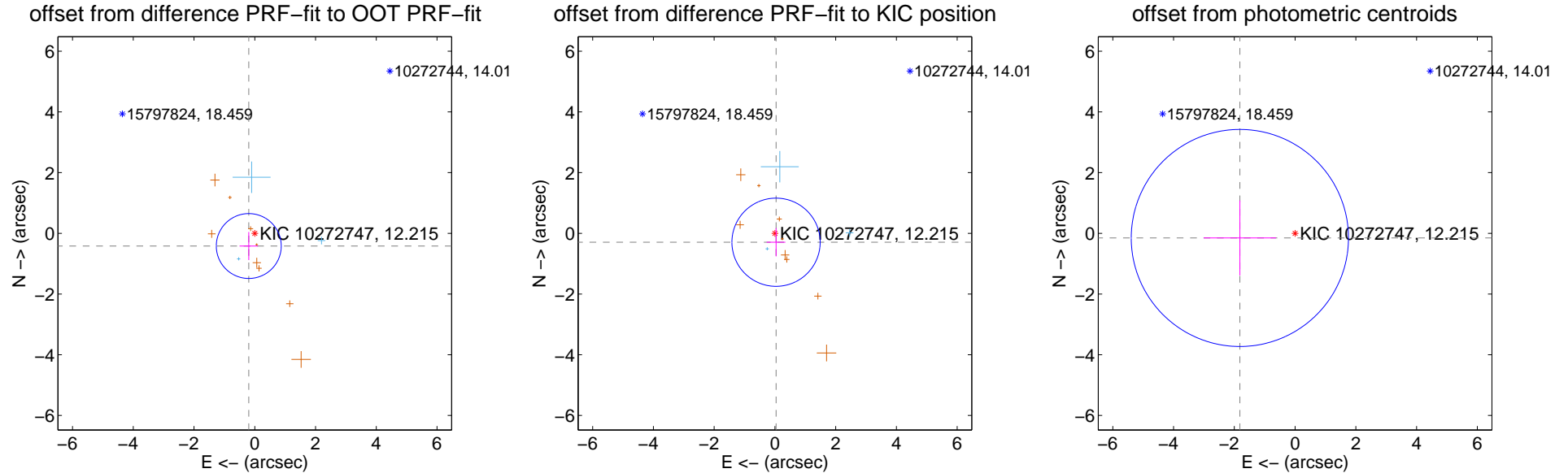
DV Centroid Data

Supplemental centroid analysis for 010272747-01. Kepler magnitude: 12.21. Transit SNR 7.68

There are 3 quarters with good PRF difference image offsets

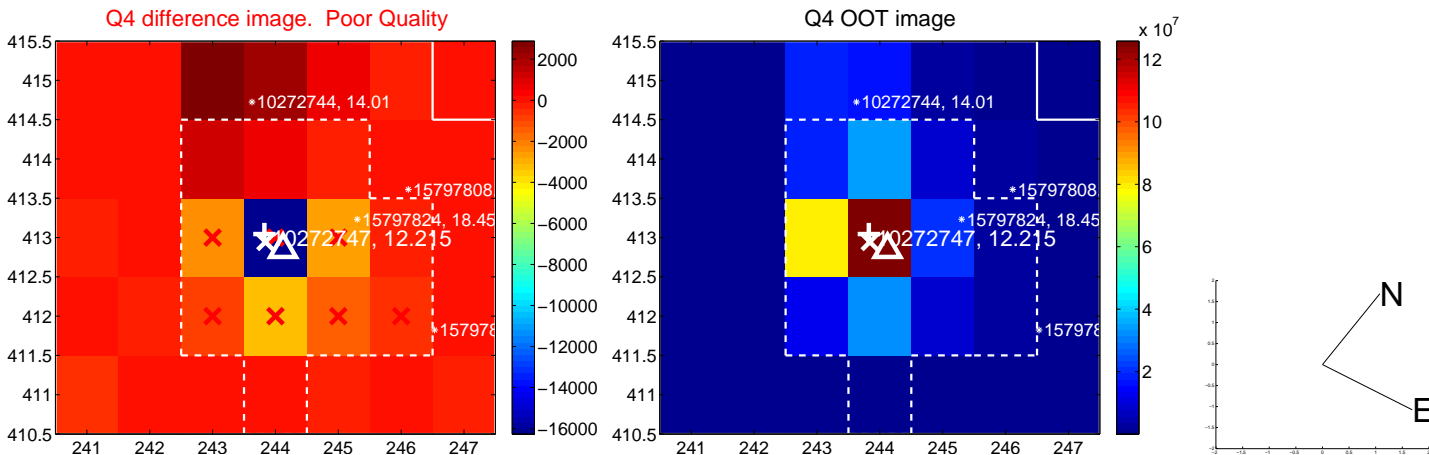
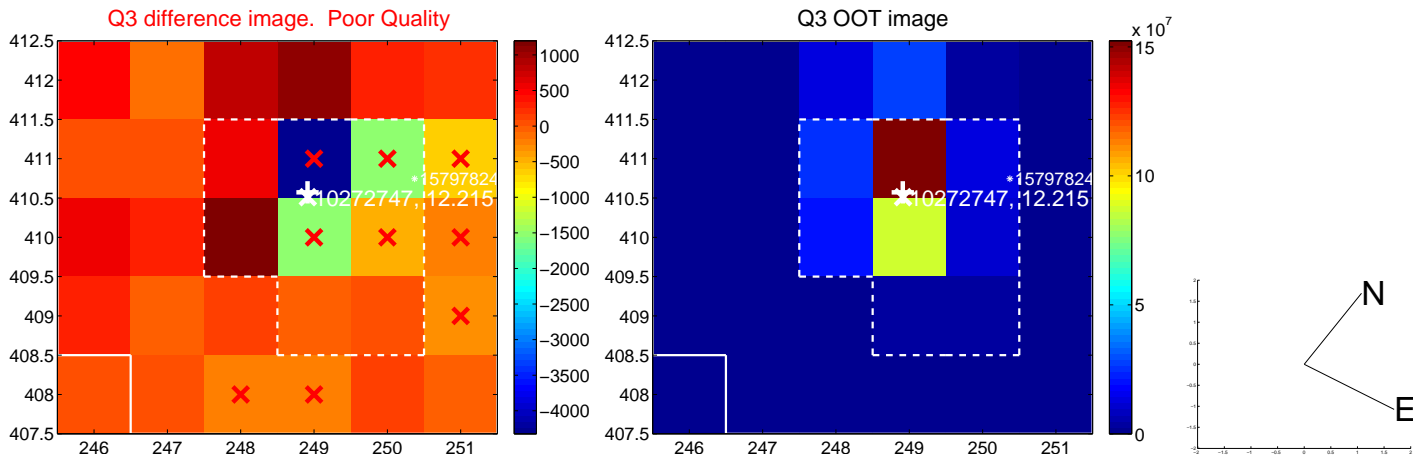
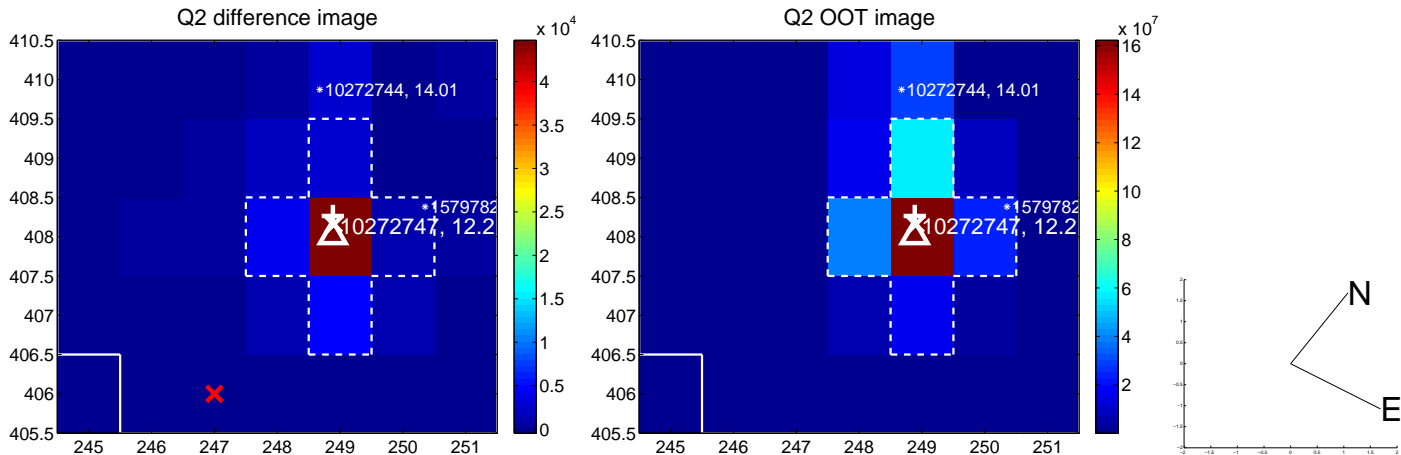
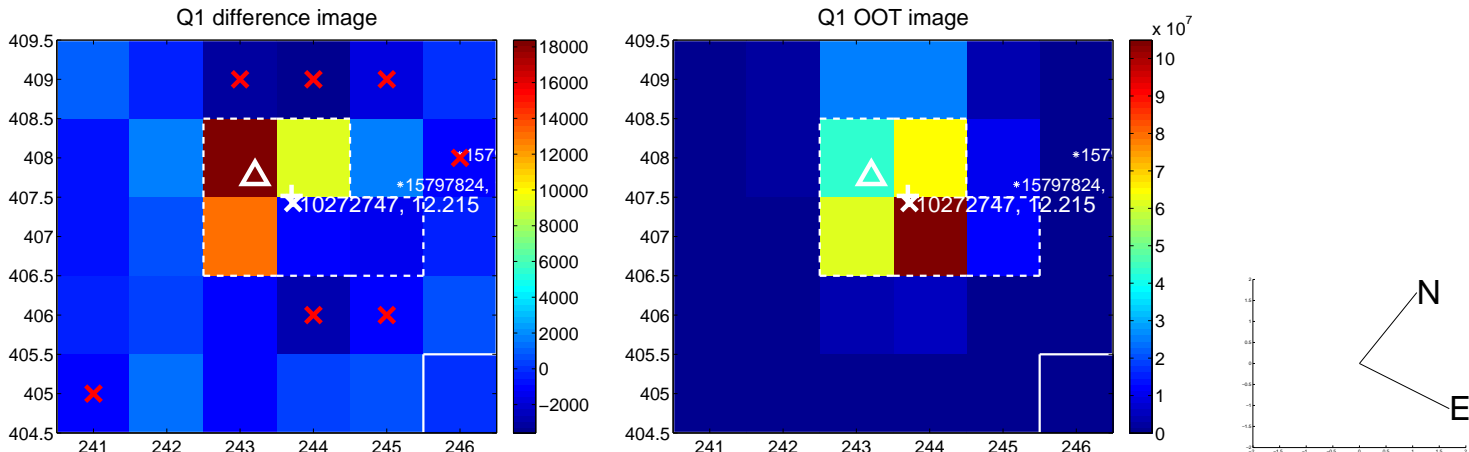
The direct PRF centroid is offset from the target star catalog position by about 0.38 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.462 ± 0.356	1.30	0.198 ± 0.303	-0.418 ± 0.464
PRF-fit source offset from KIC position	0.296 ± 0.484	0.61	-0.037 ± 0.309	-0.293 ± 0.466
photometric centroid source offset	1.82 ± 1.19	1.53	1.82 ± 1.19	-0.15 ± 1.24

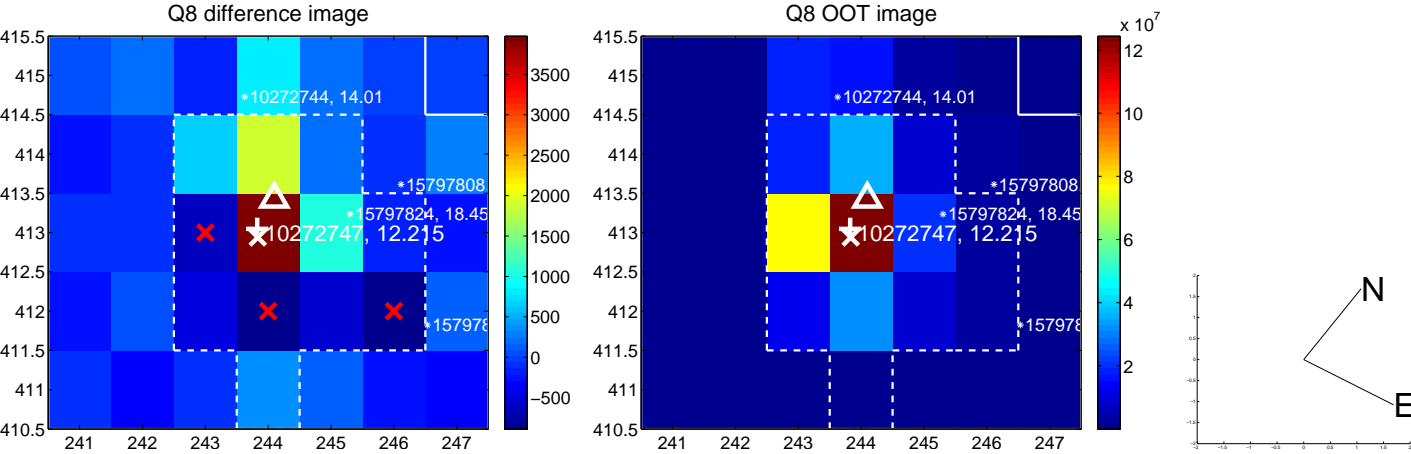
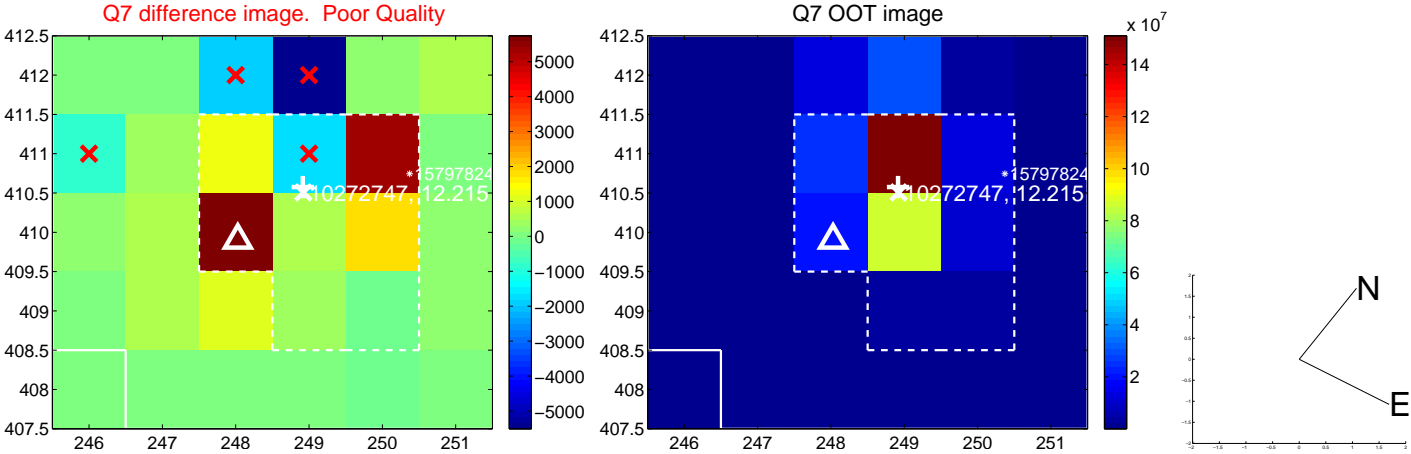
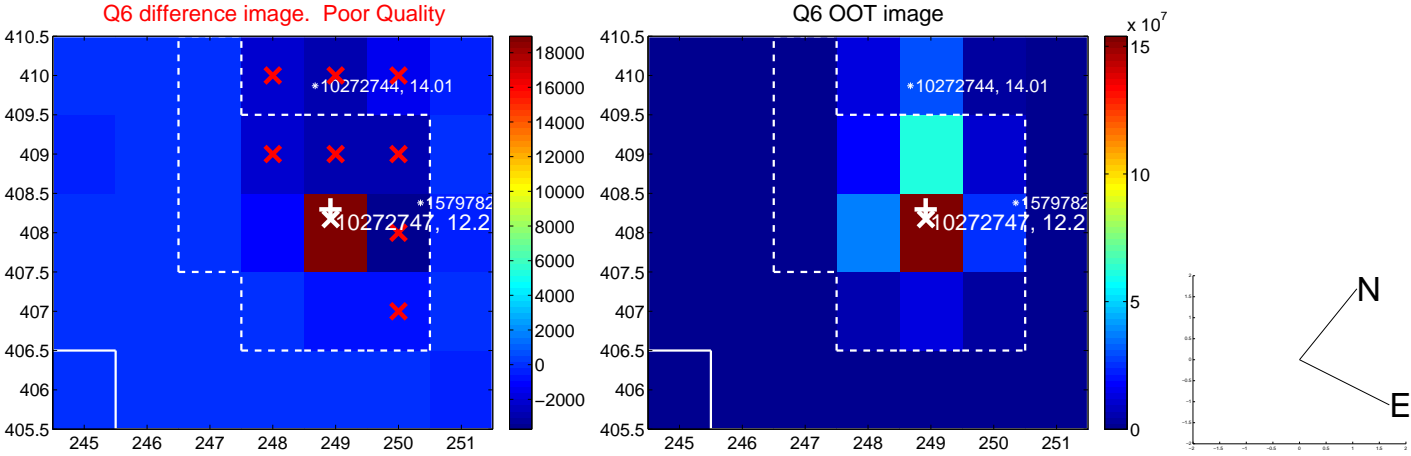
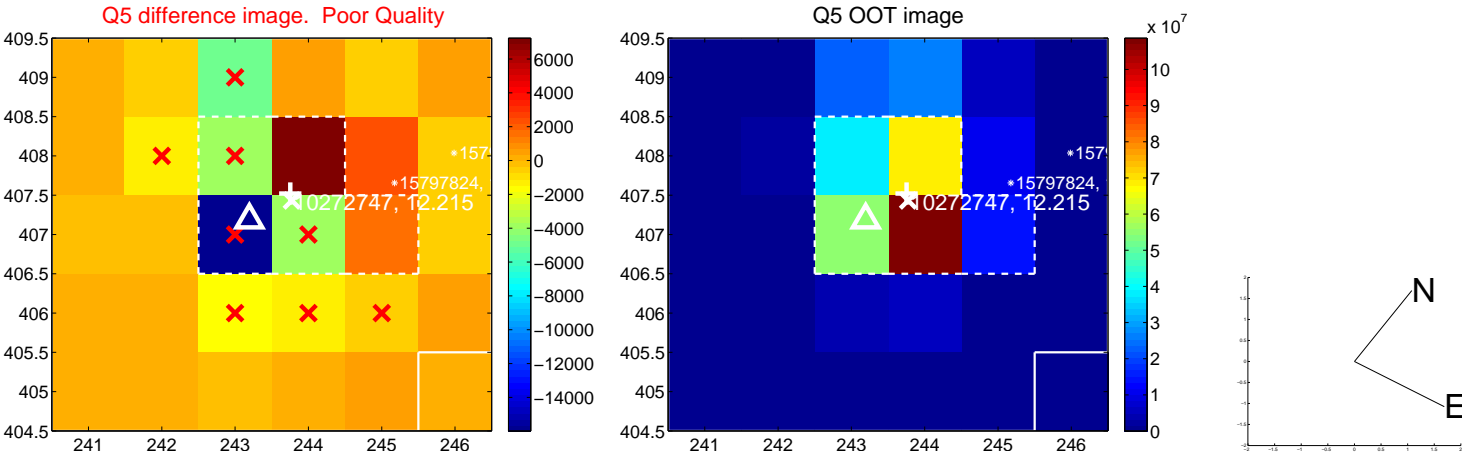


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

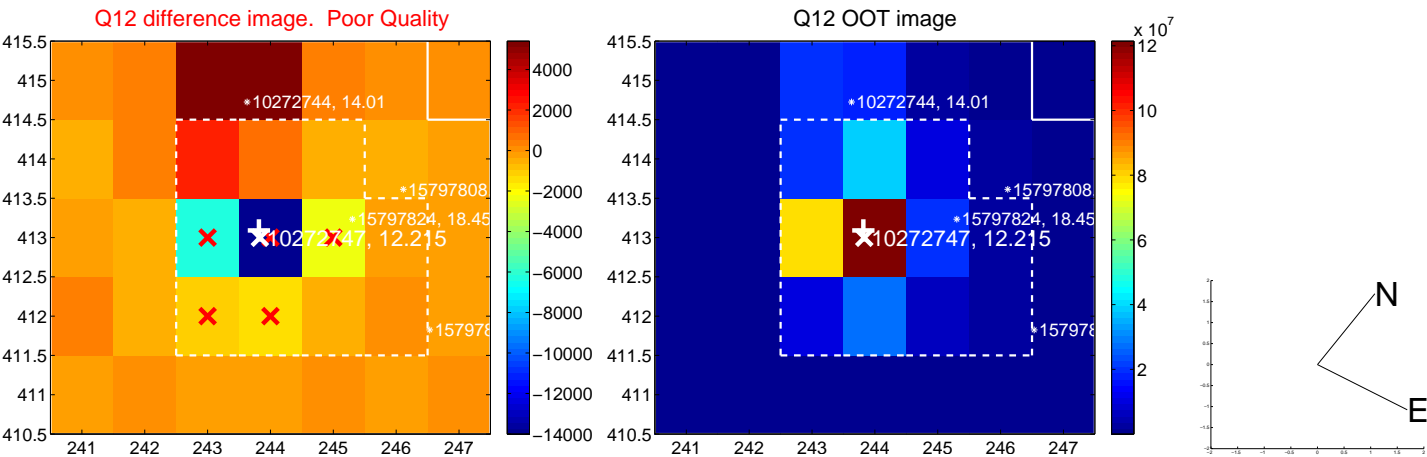
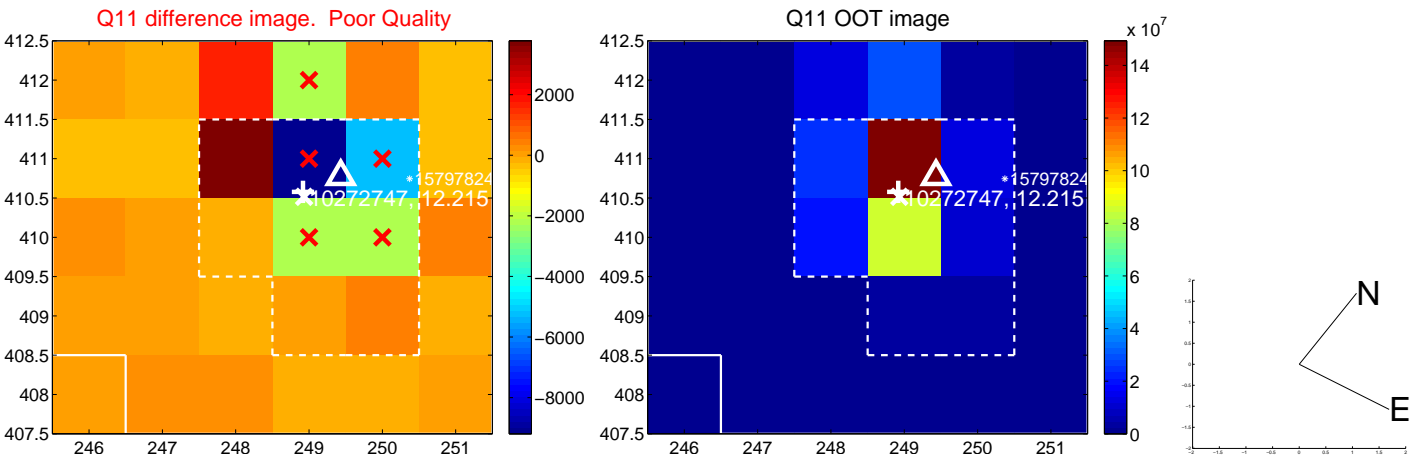
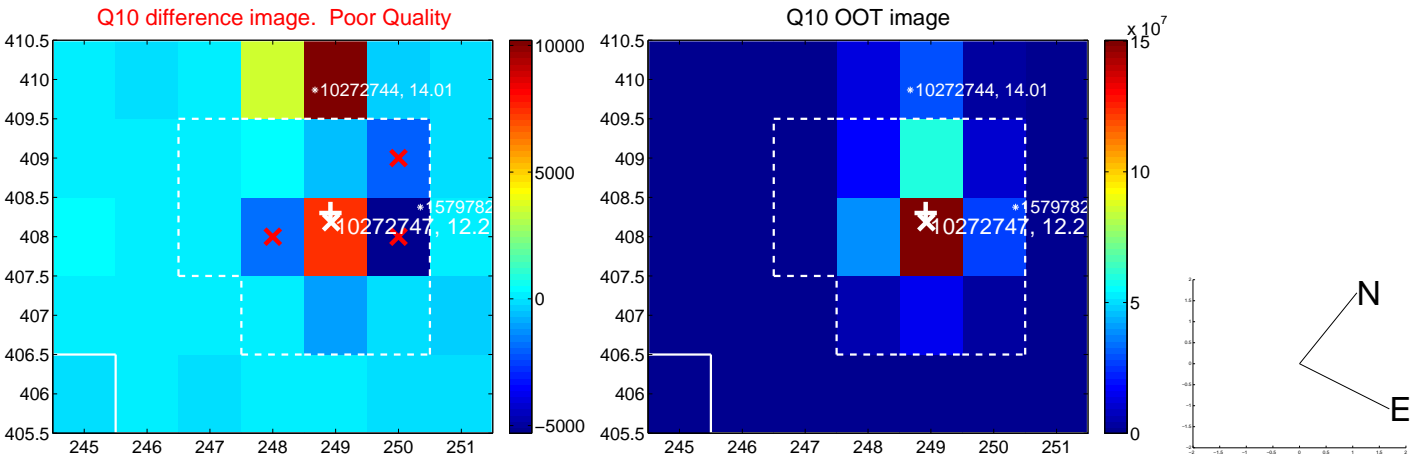
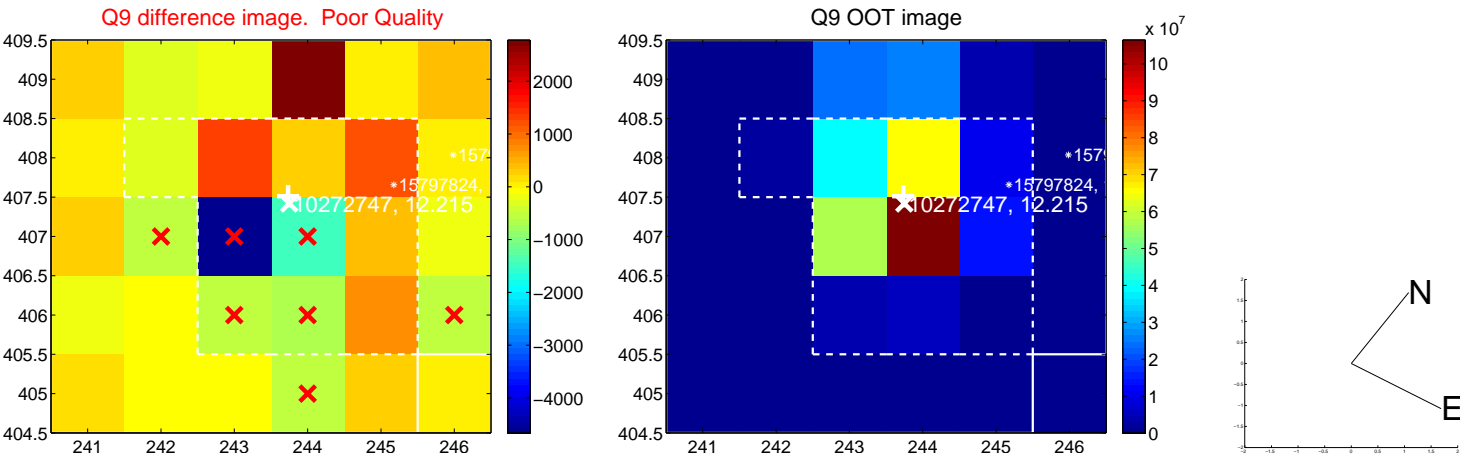
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



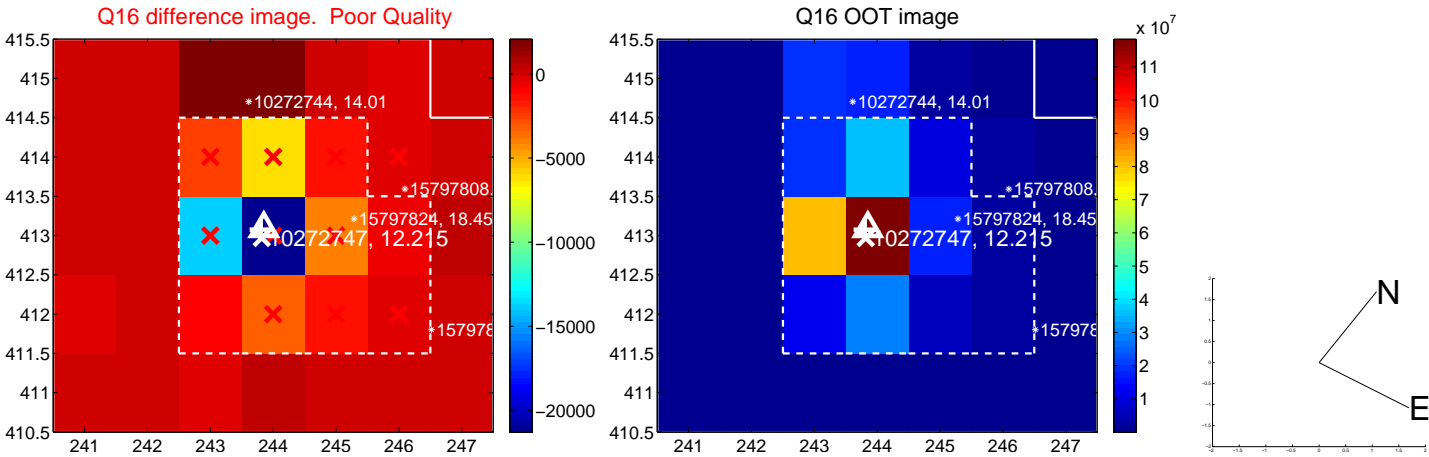
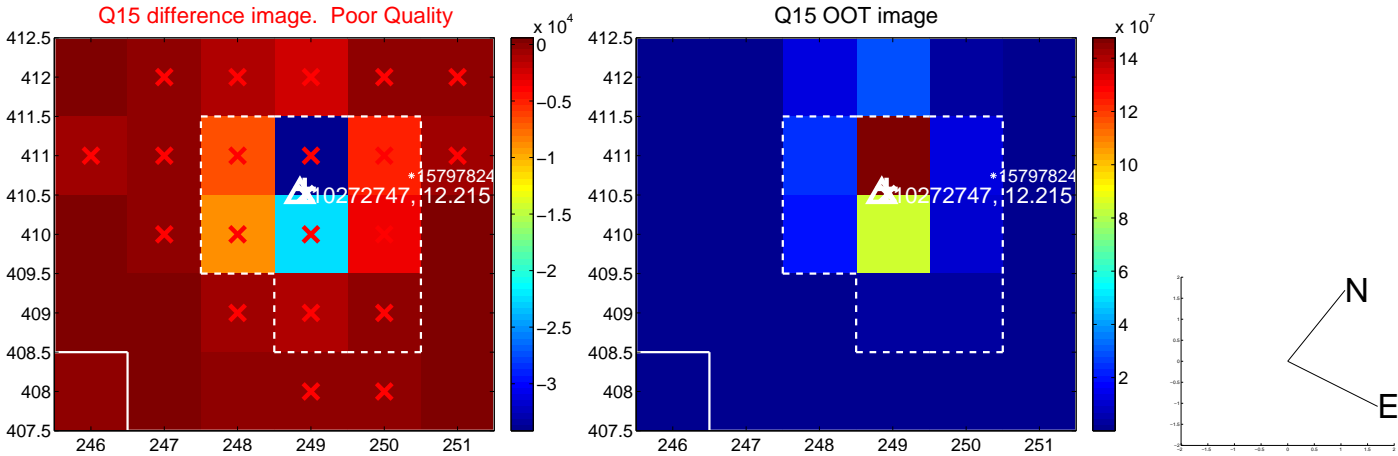
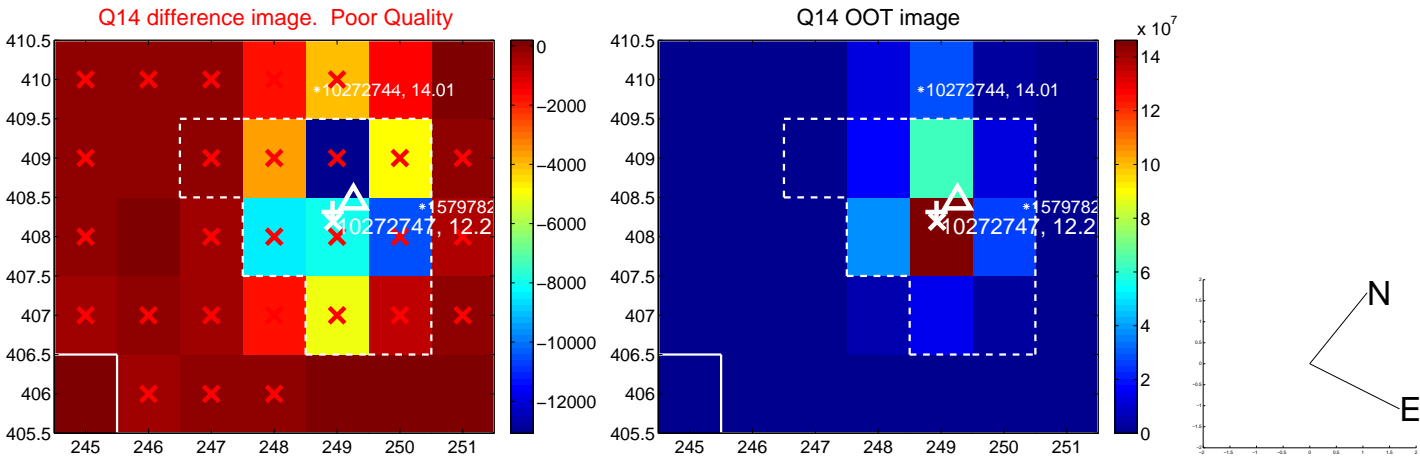
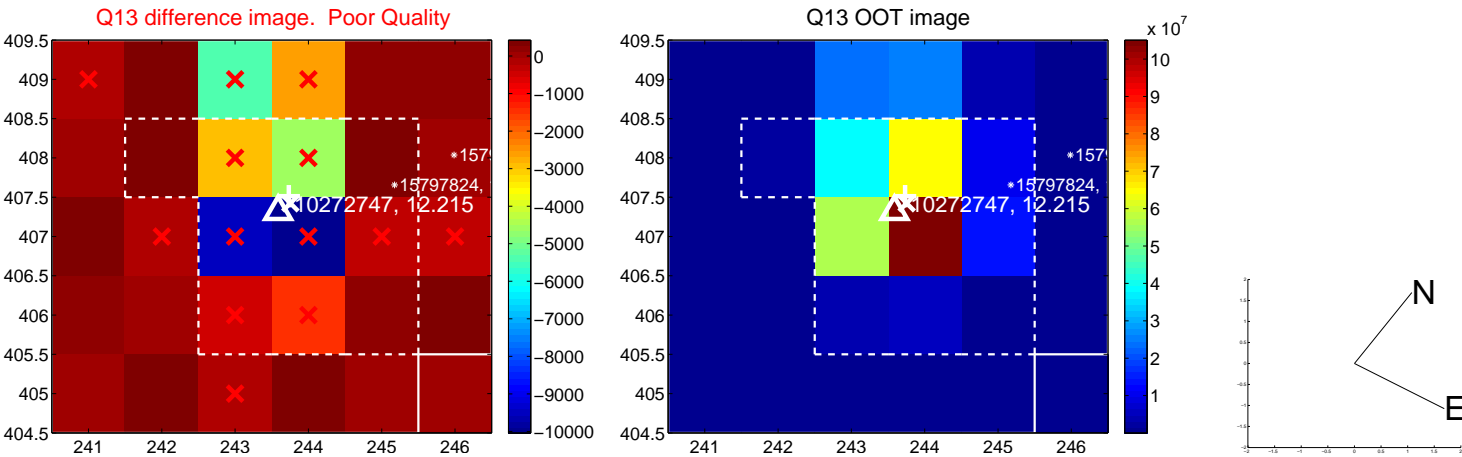
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



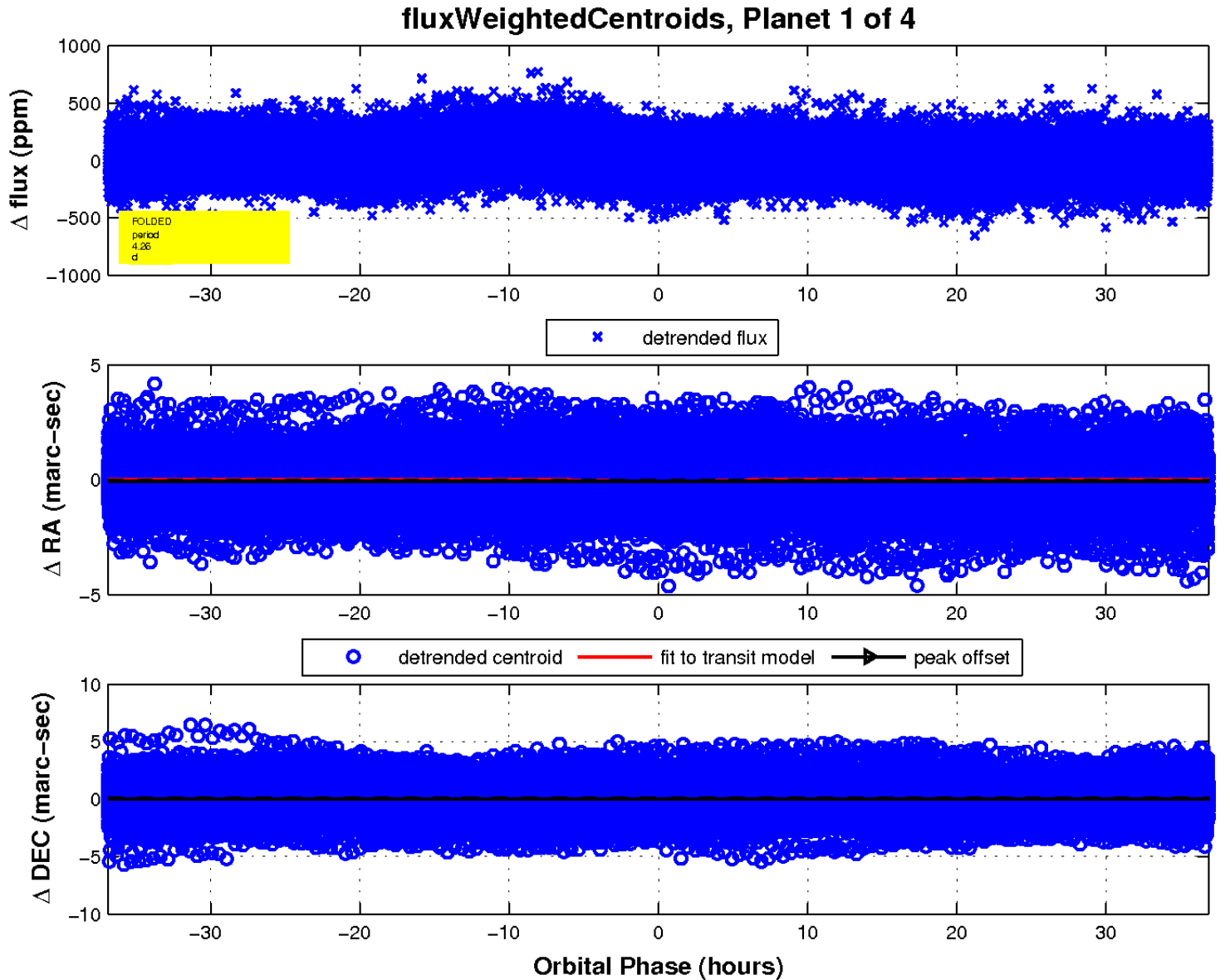
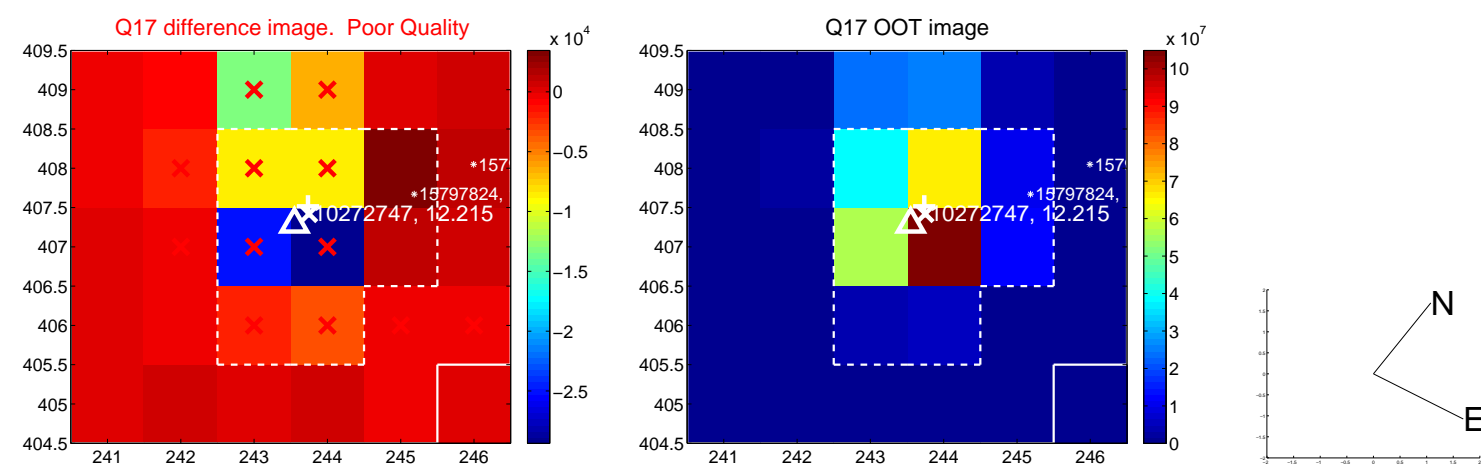
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

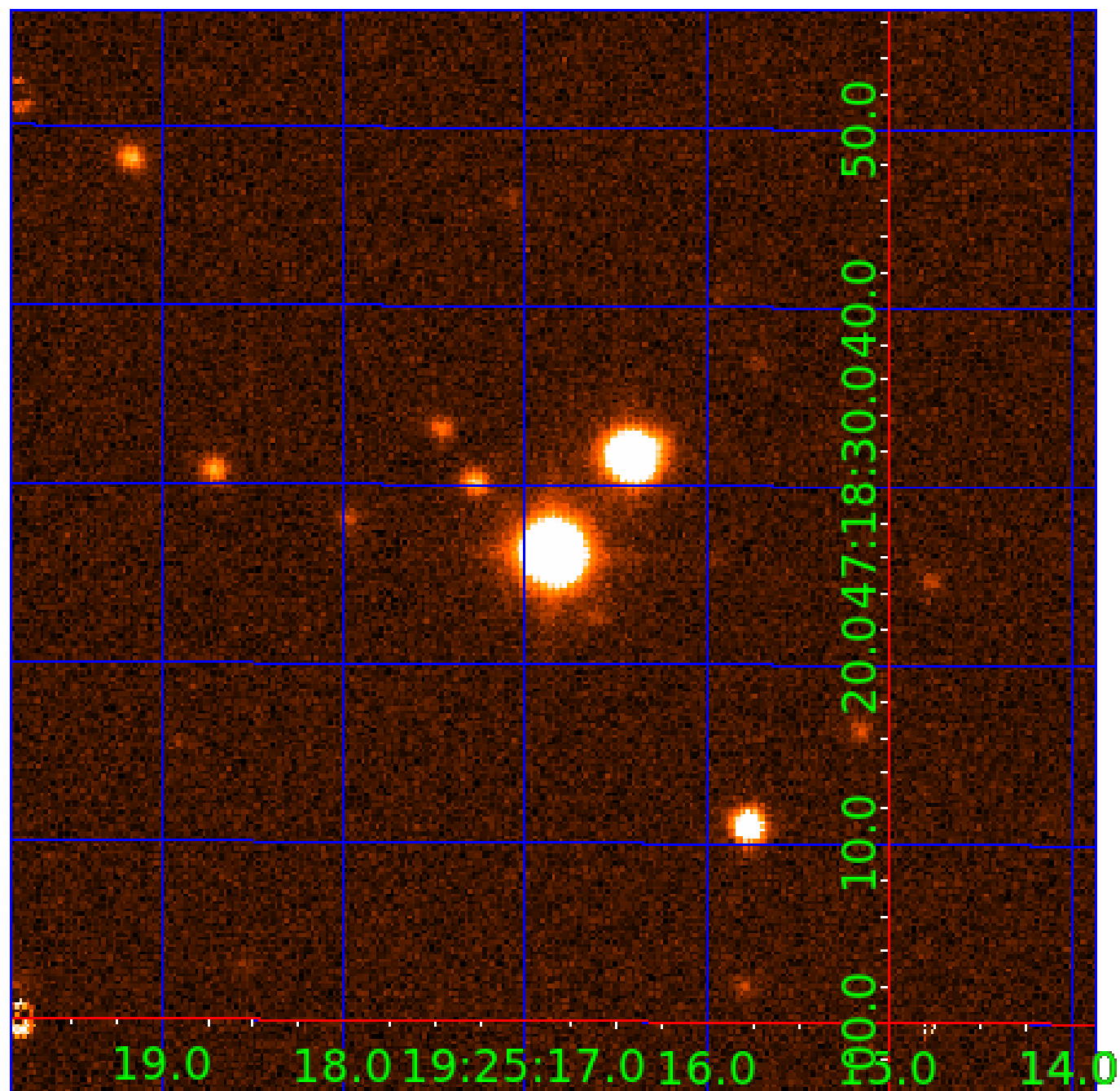


white \times : KIC target position; $+$: OOT centroid; Δ : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 010272747

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})
010272747-01	OBS	No	4.261915	133.381147	26.2	12.297	11.2	7.7	1.99	7313	1.18	2991.82
010272747-02	OBS	No	4.261801	135.460223	25.5	14.933	9.9	8.3	1.99	7313	1.17	2991.93
010272747-03	OBS	No	127.293919	230.783382	193.7	20.159	9.7	6.7	1.99	7313	3.02	32.28
010272747-04	OBS	No	12.785563	141.318636	167.8	27.321	8.7	12.7	1.99	7313	5.00	691.48

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010272747-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—MOD_NONUNIQ_DV—CENT_KIC_POS
010272747-02	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_KIC_POS
010272747-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
010272747-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_KIC_POS

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

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

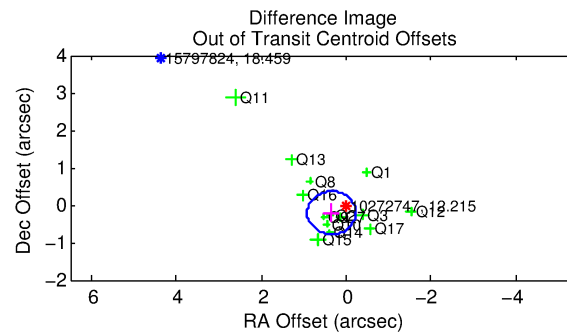
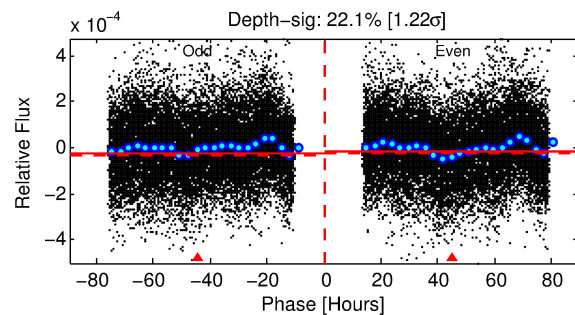
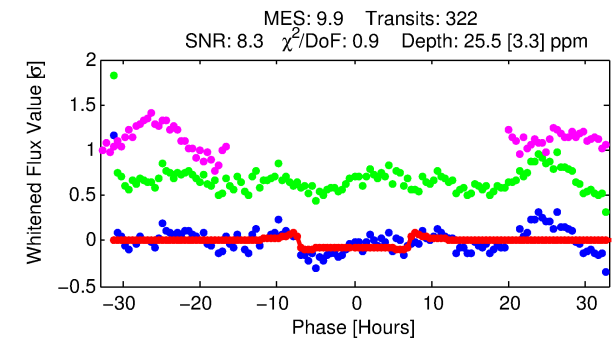
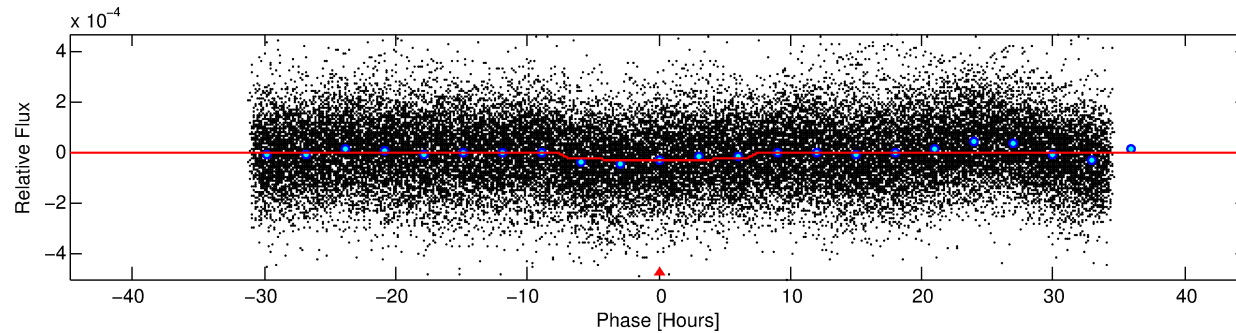
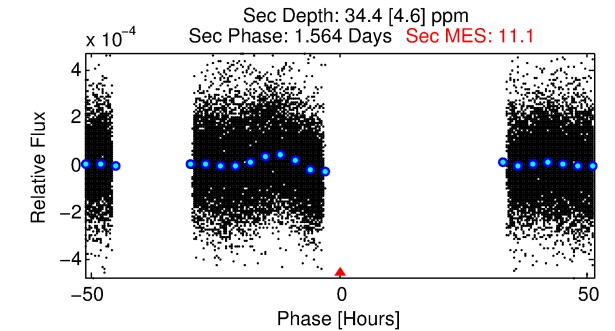
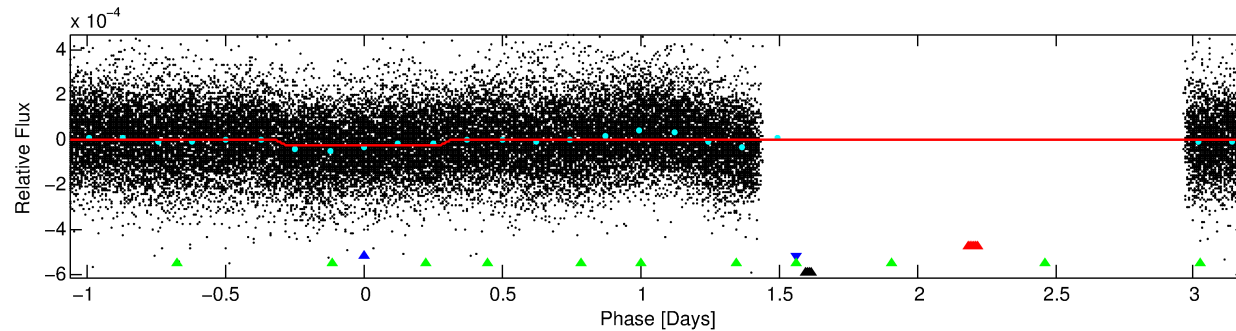
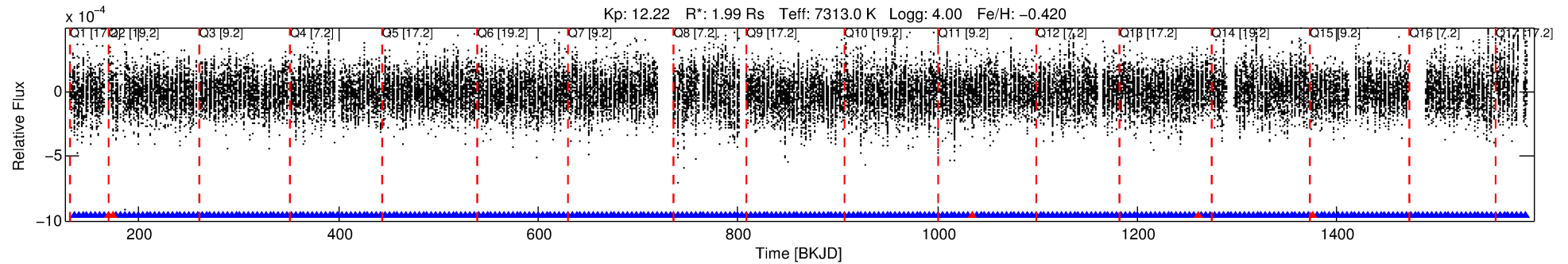
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010272747-02

No Significant Match Found

DV One-Page Summary

KIC: 10272747 Candidate: 2 of 4 Period: 4.262 d



DV Fit Results:

Period = 4.26180 [0.00005] d
Epoch = 135.4602 [0.0070] BKJD
Rp/R* = 0.0054 [0.0005]
a/R* = 1.32 [0.25]
b = 0.91 [0.08]
Seff = 2991.93 [1630.98]
Teq = 1886 [257] K
Rp = 1.17 [0.43] Re
a = 0.0582 [0.0192] AU
Ag = 46.51 [26.56] [1.71σ]
Teffp = 7615 [556] K [9.35σ]

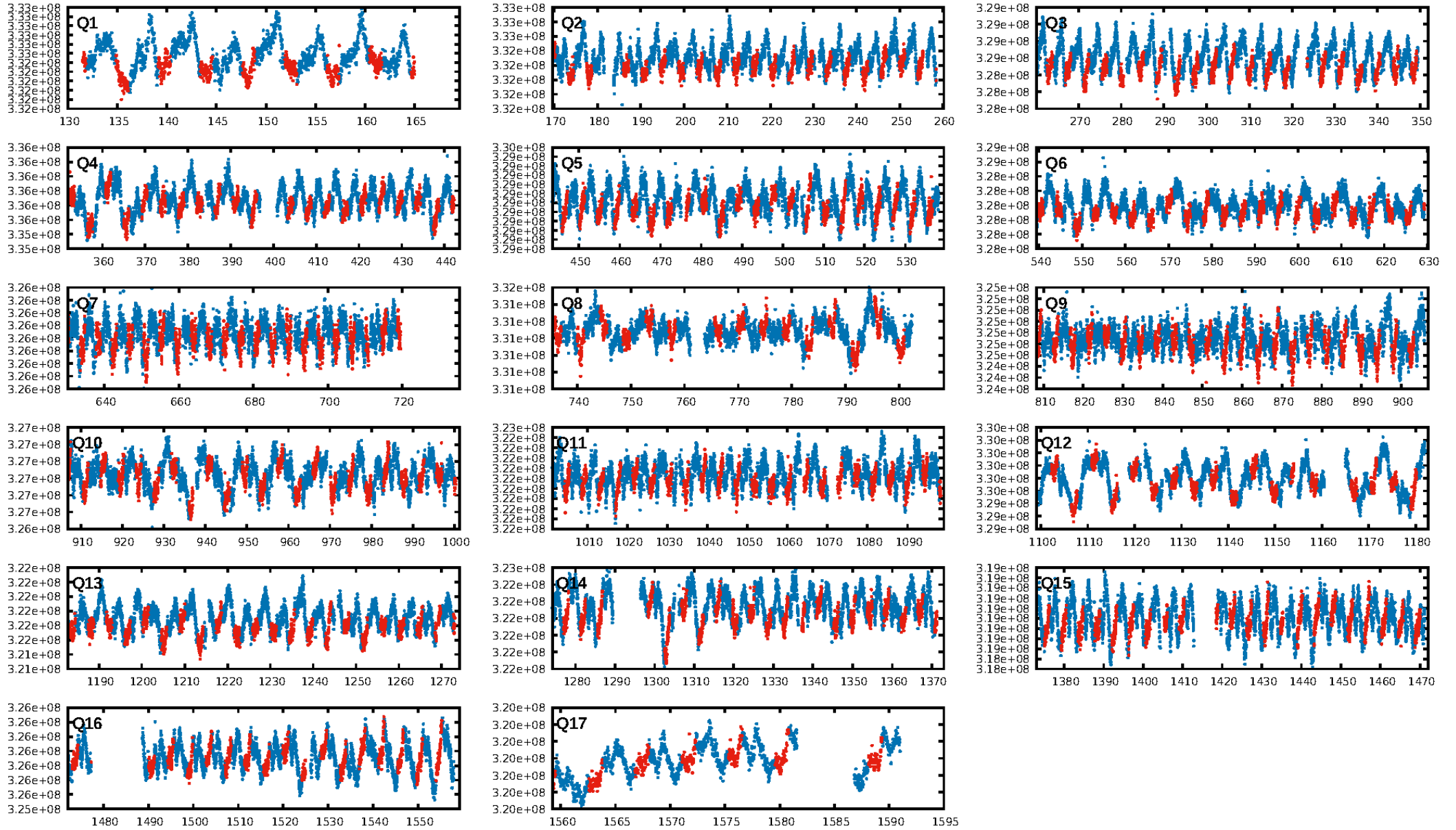
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 9.66e-13
RollingBand-fgt: 0.98 [302/307]
GhostDiagnostic-chr: 5.889
Centroid-sig: 29.0%
Centroid-so: 1.574 arcsec [1.22σ]
OotOffset-rm: 0.401 arcsec [2.10σ]
OotOffset-st: 3/4/3/4 [14]
KicOffset-rm: 0.115 arcsec [0.34σ]
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DiffImageOverlap-fno: 1.00 [17/17]

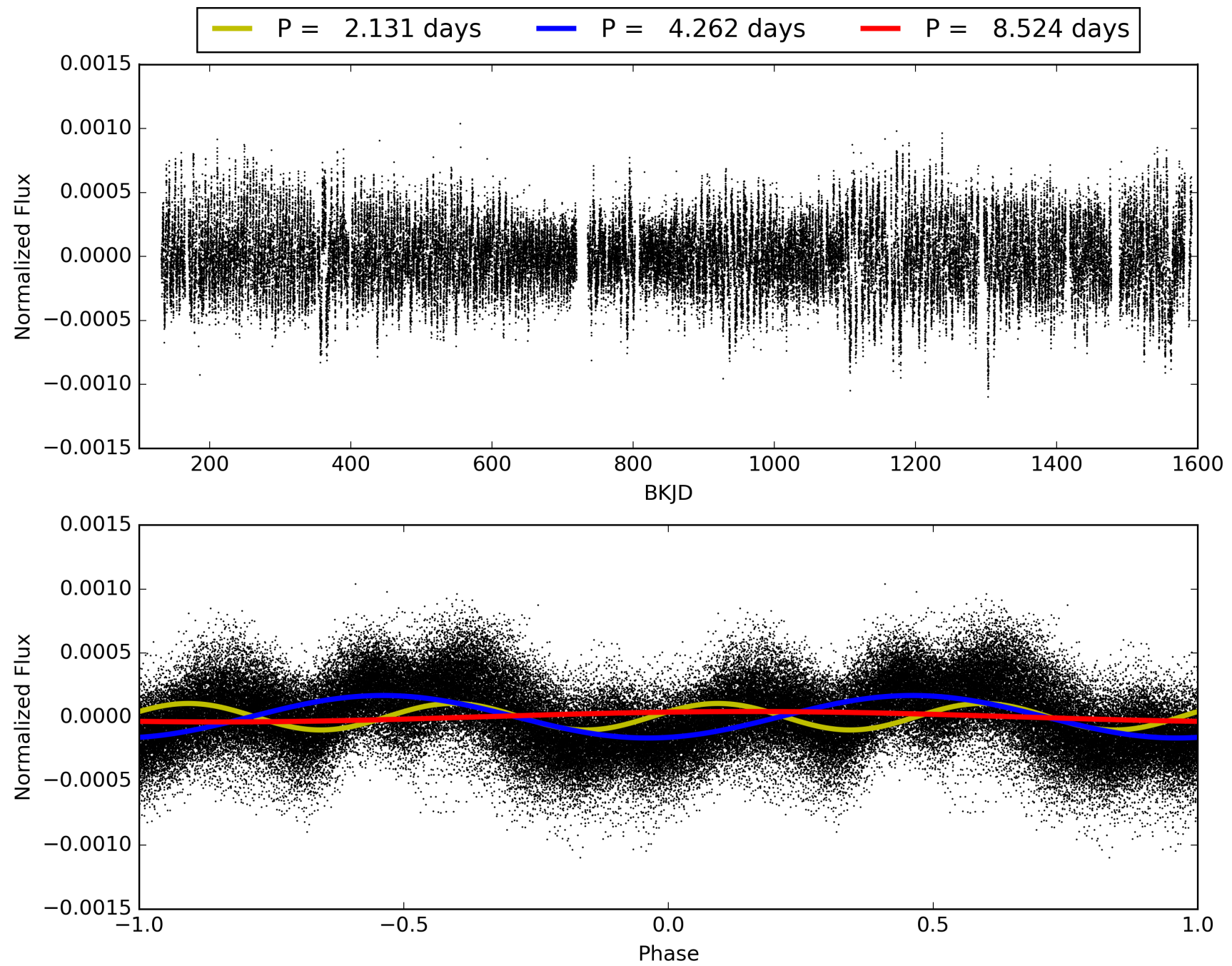
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 15:38:19 Z

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

TCE 010272747-02, PDC Light Curves

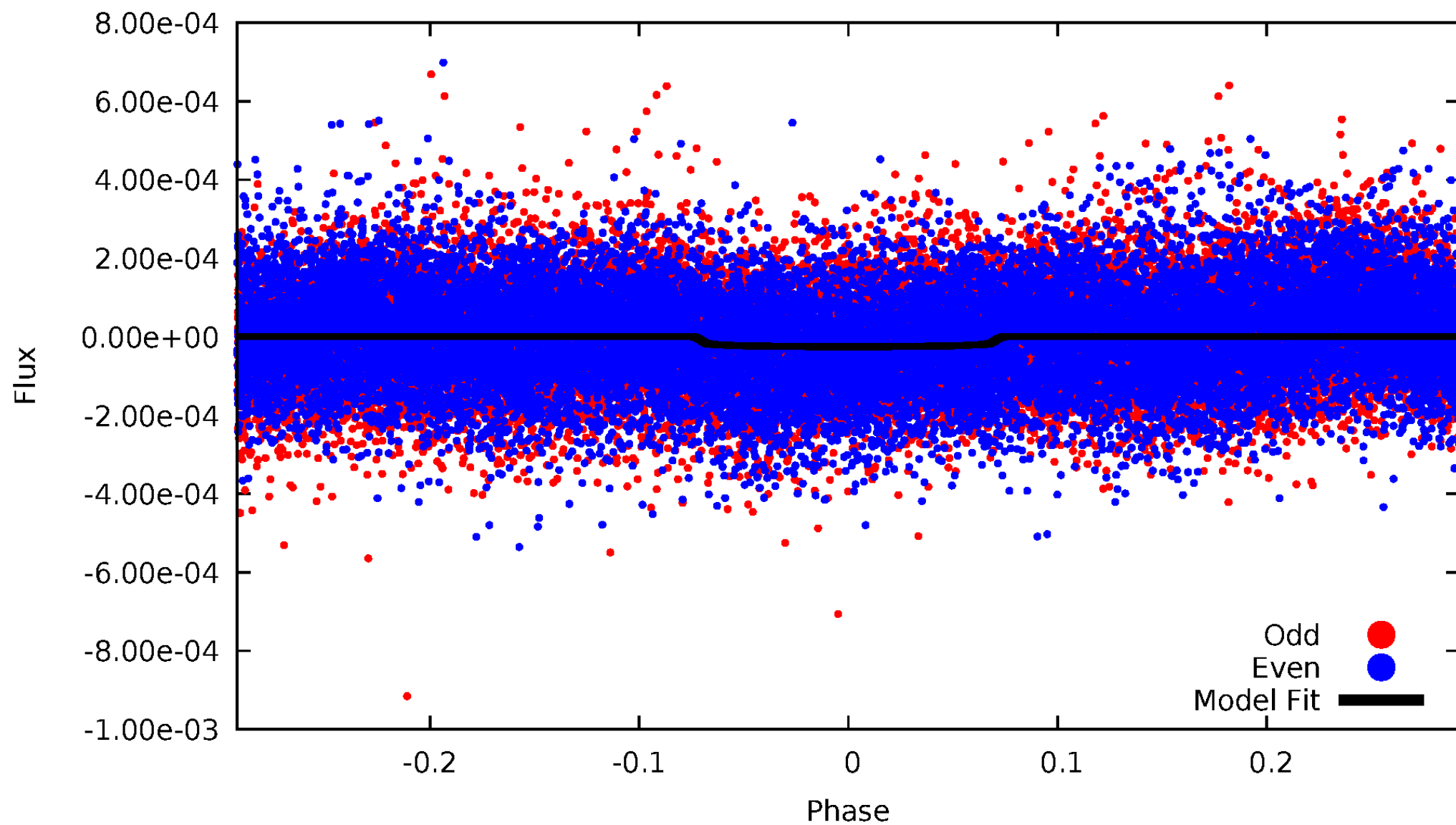


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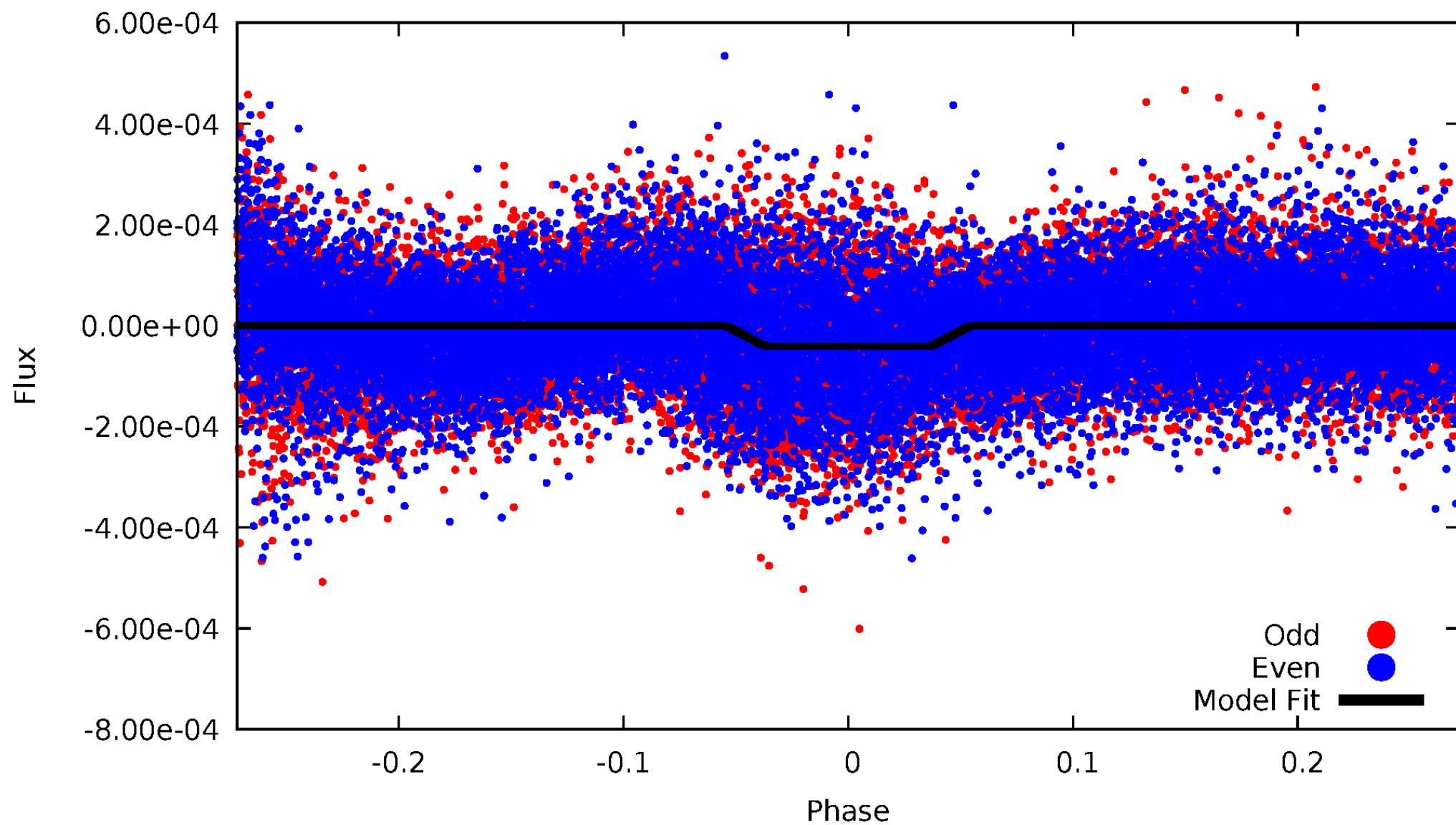
DV Odd/Even

TCE 010272747-02



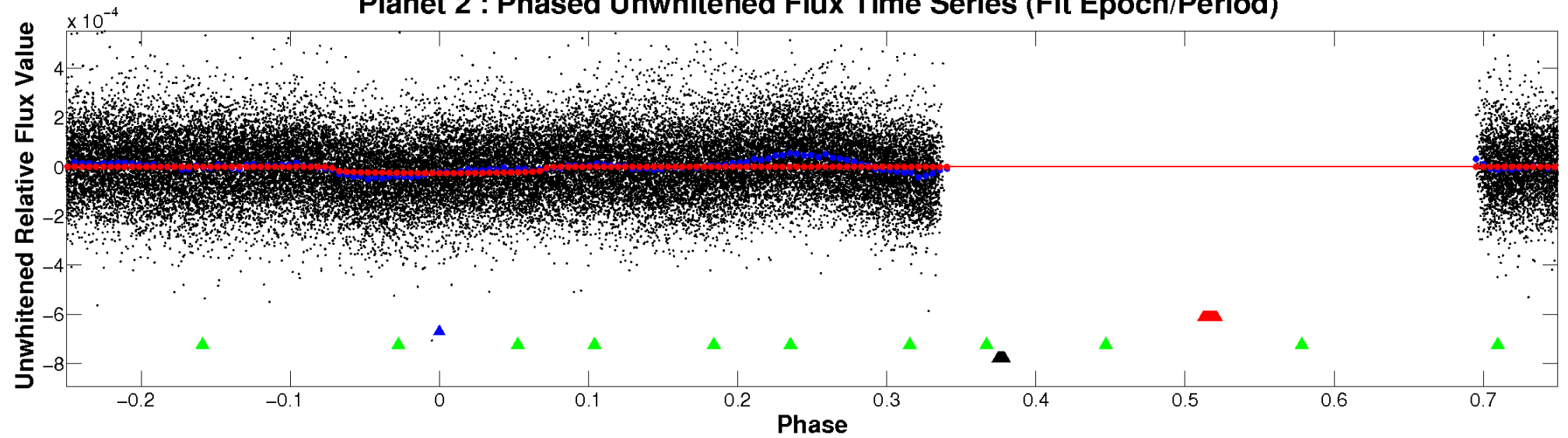
ALT Odd/Even

TCE 010272747-02

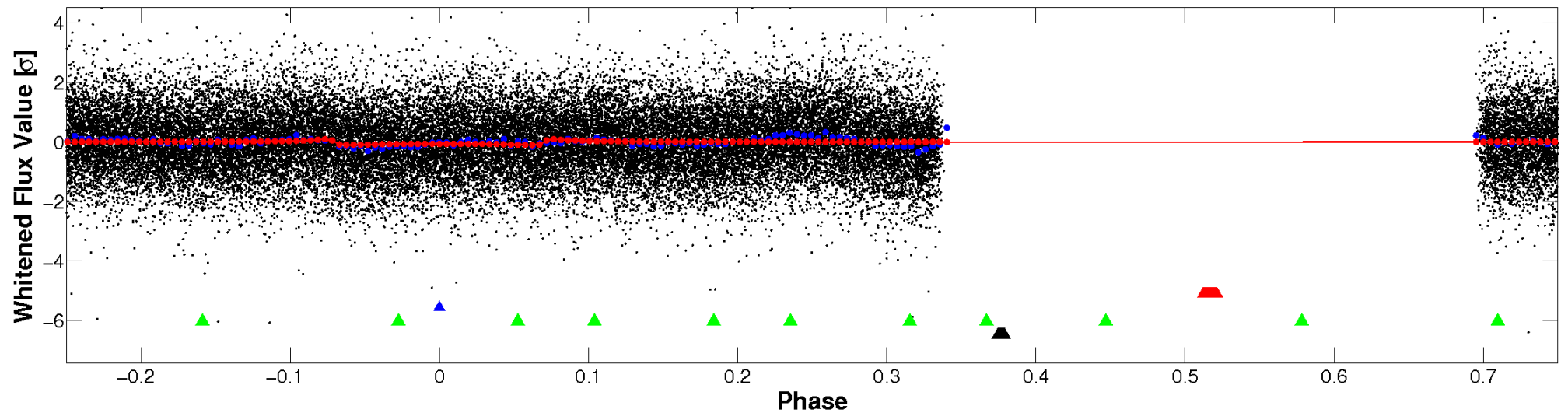


Non-Whitened Vs. Whitened Light Curve

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

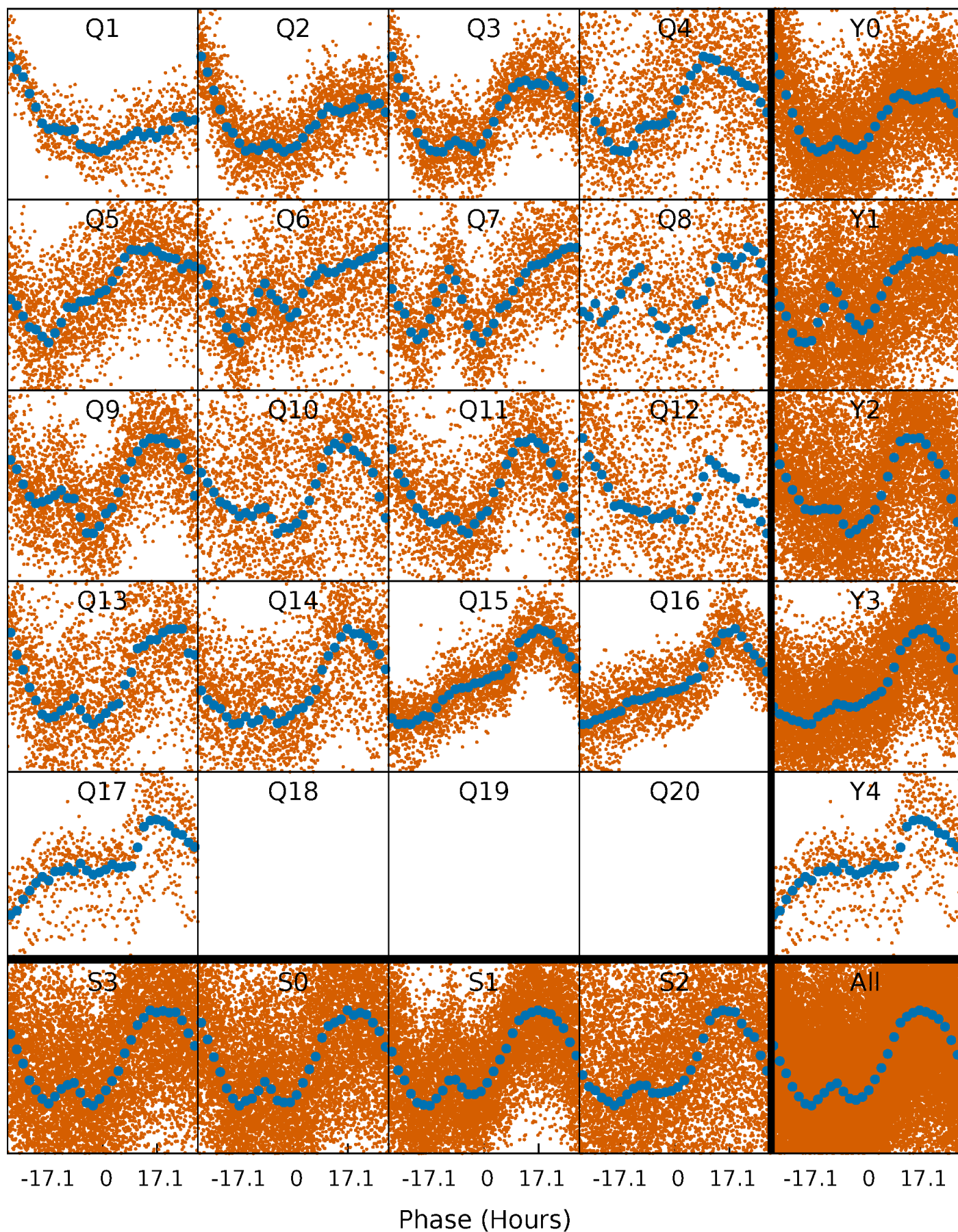


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



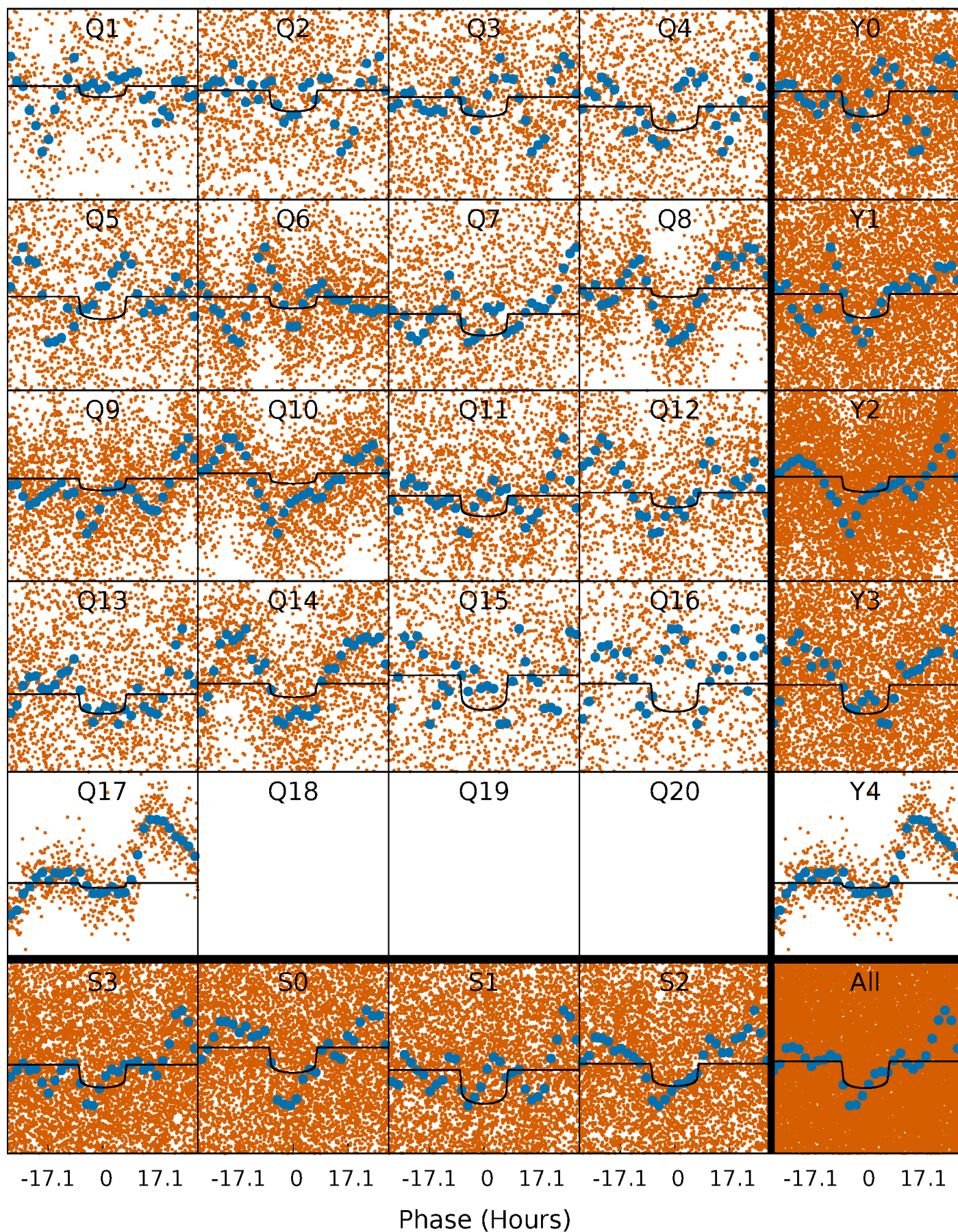
PDC Quarter-Phased Transit Curves

TCE 010272747-02 P= 4.261801 Days $T_0=135.460223$ (BKJD)



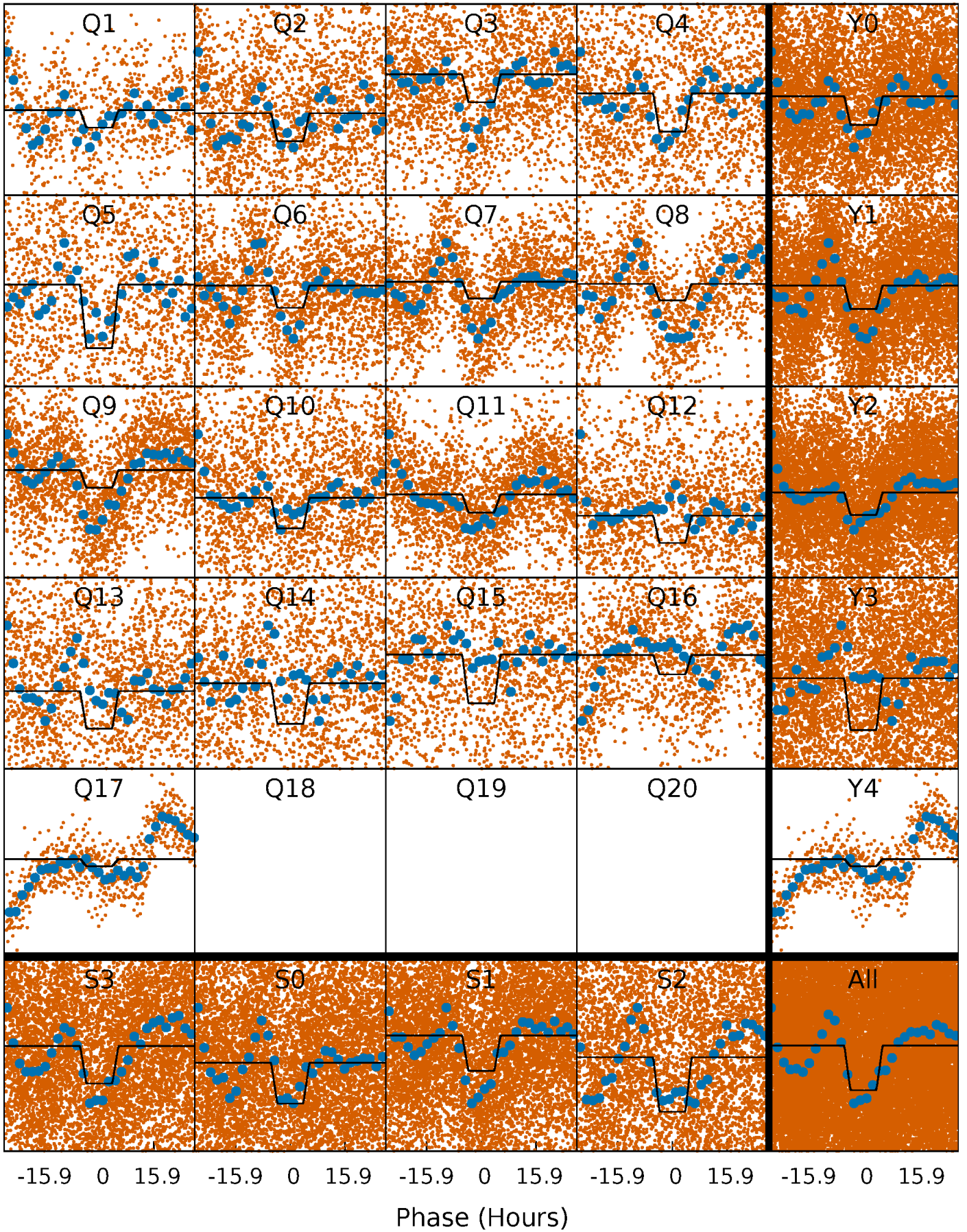
DV Quarter-Phased Transit Curves

TCE 010272747-02 P= 4.261801 Days $T_0=135.460223$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

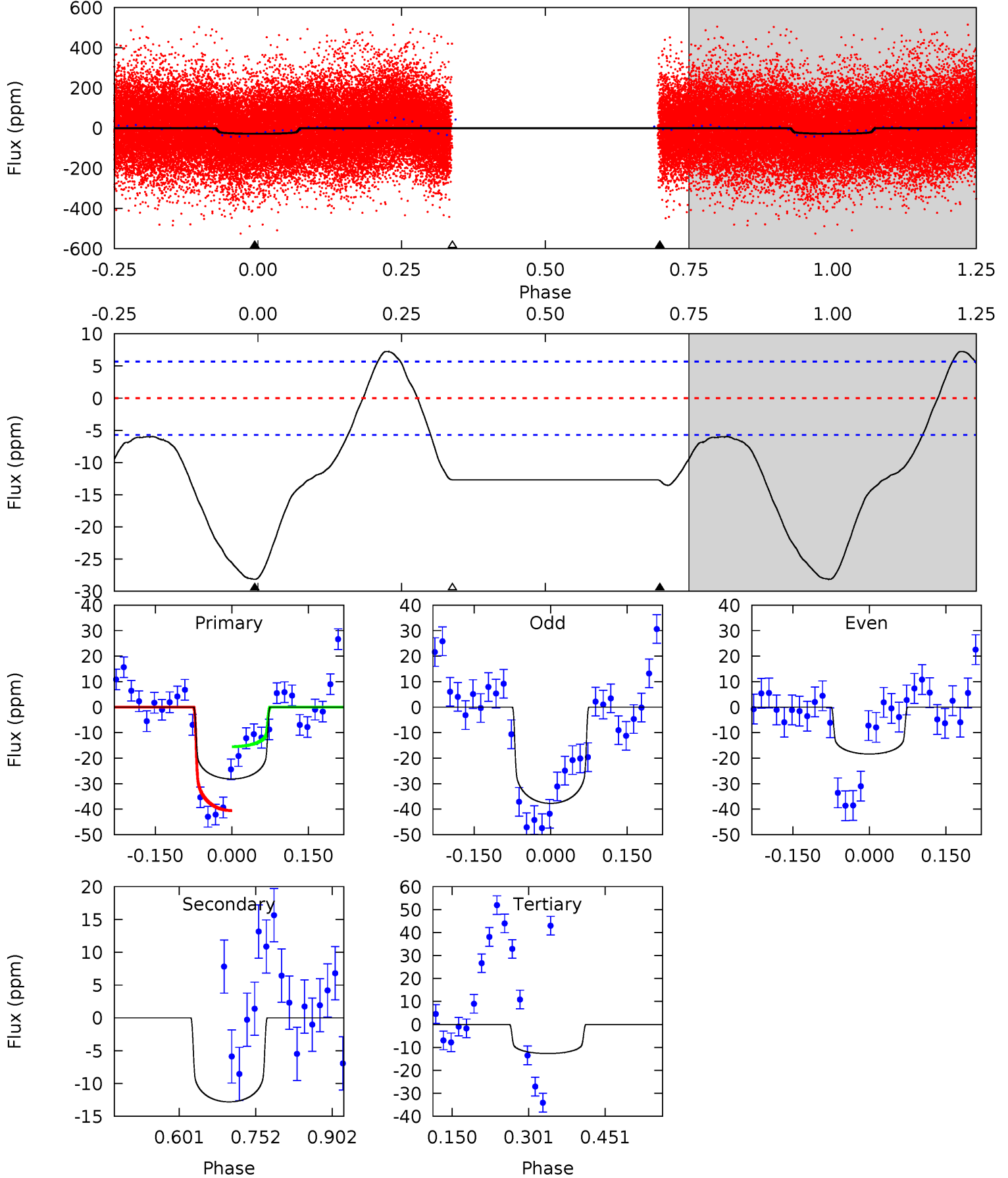
TCE 010272747-02 P= 4.261329 Days $T_0=135.485342$ (BKJD)



DV Model-Shift Uniqueness Test

010272747-02, P = 4.261801 Days, E = 131.198422 Days

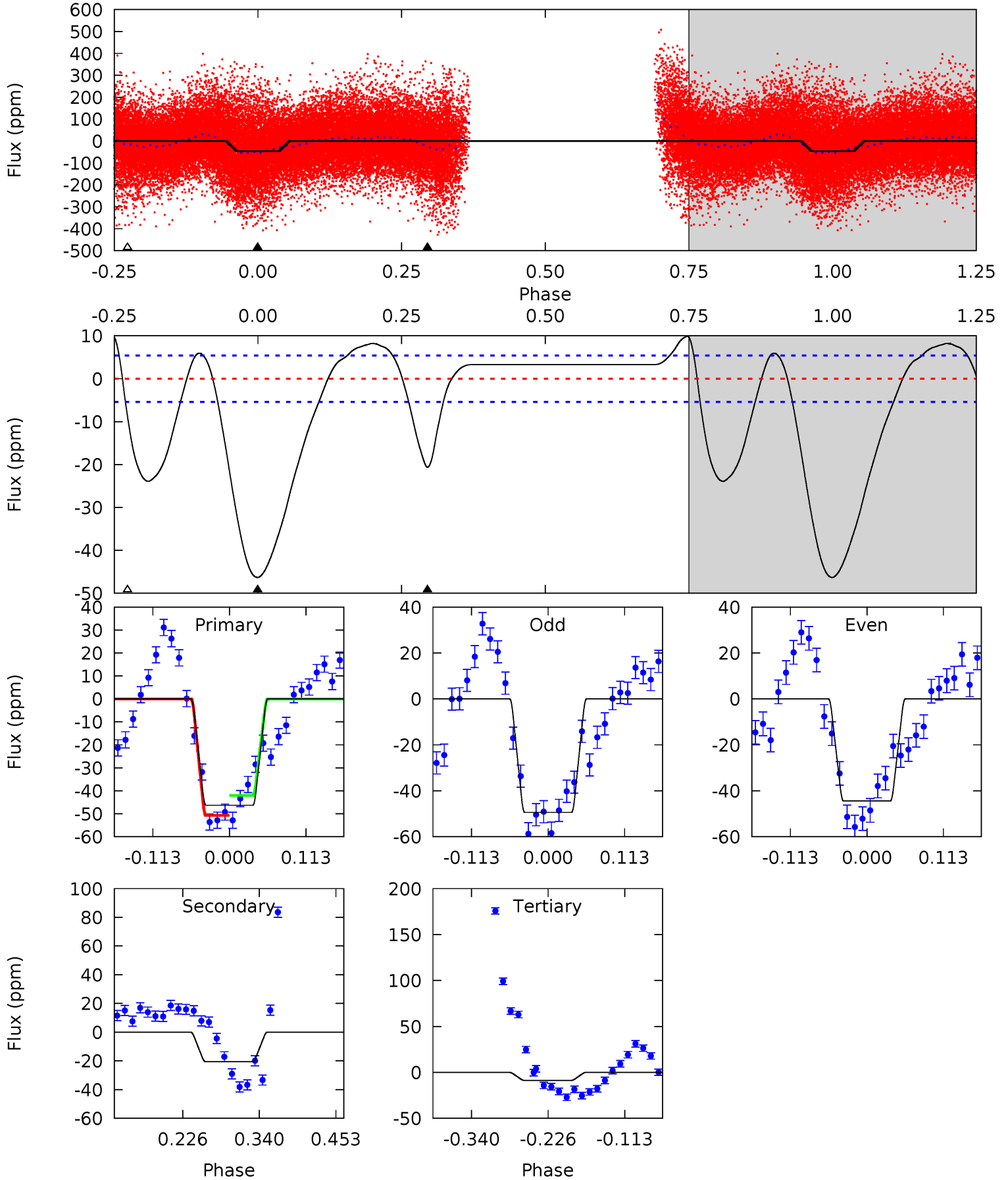
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
22.1	10.1	9.97	0	4.48	1.44	4.69	12.2	22.1	0.10	10.1	7.63	1.05	0.20	9.87



Alt Model-Shift Uniqueness Test

010272747-02, P = 4.261329 Days, E = 131.224013 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
39.0	17.4	7.35	0	4.54	1.58	9.81	31.6	39.0	10.0	17.4	2.09	0.99	0.18	4.13



Stellar Parameters For KIC 010272747

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	7313^{+205}_{-307}	$4.001^{+0.301}_{-0.150}$	$-0.420^{+0.250}_{-0.300}$	$1.987^{+0.468}_{-0.702}$	$1.444^{+0.193}_{-0.289}$	$0.259^{+0.536}_{-0.109}$
	+3%/-4%	+8%/-4%	+60%/-71%	+24%/-35%	+13%/-20%	+207%/-42%
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 010272747-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-13 ± 1	$1.14^{+0.22}_{-0.23}$	2594^{+187}_{-213}	5816^{+421}_{-328}	18^{+10}_{-6}
Alt.	-21 ± 1	$1.38^{+0.24}_{-0.26}$	2600^{+200}_{-223}	6013^{+367}_{-315}	20^{+10}_{-5}

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 $A_{obs} \gg 1.0$

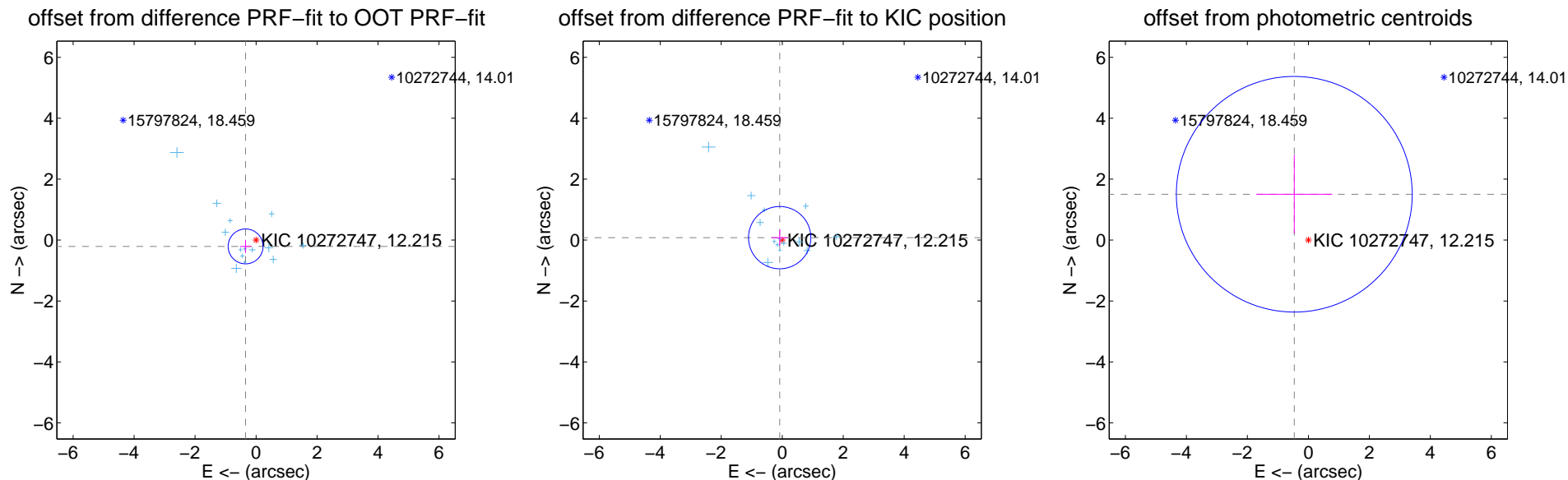
DV Centroid Data

Supplemental centroid analysis for 010272747-02. Kepler magnitude: 12.21. Transit SNR 8.27

There are 14 quarters with good PRF difference image offsets

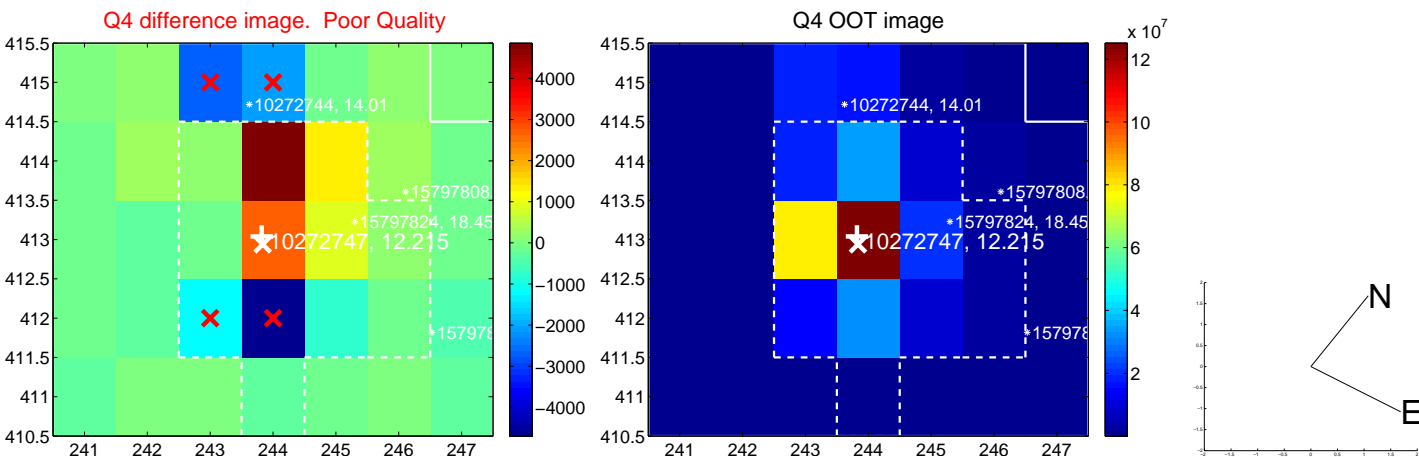
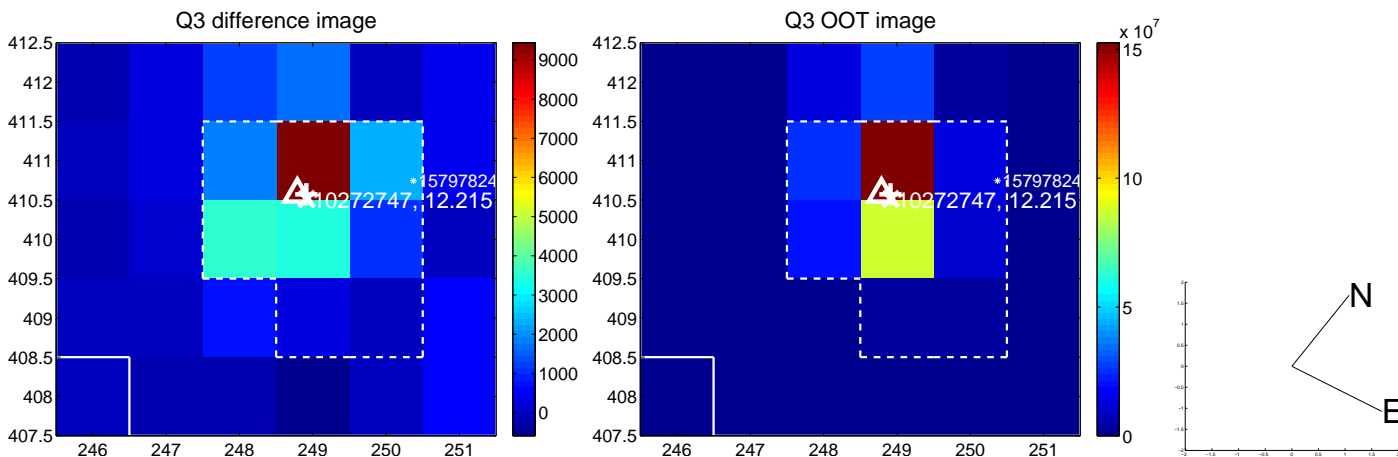
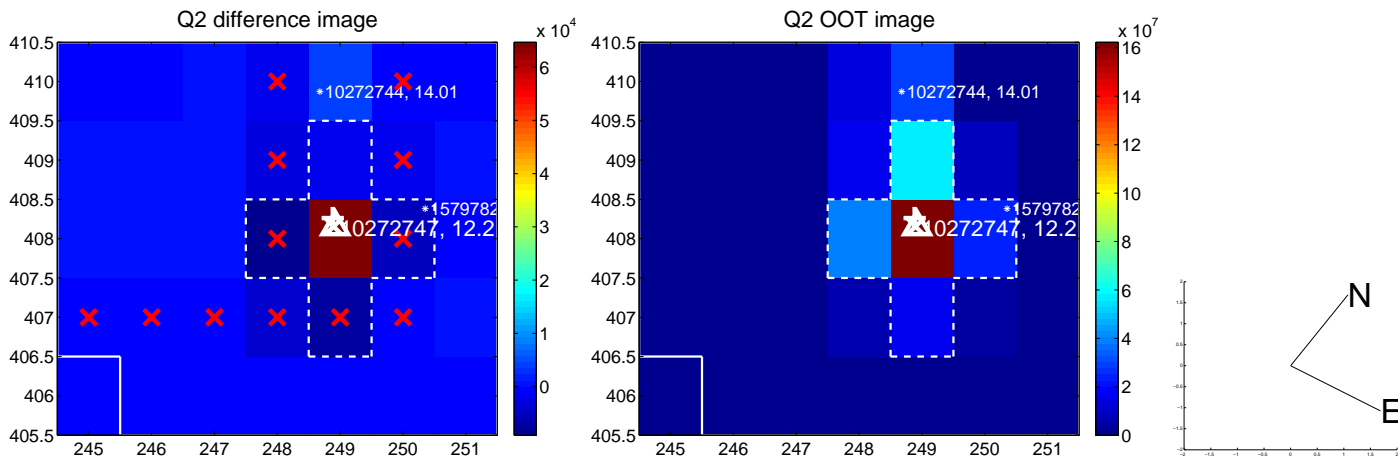
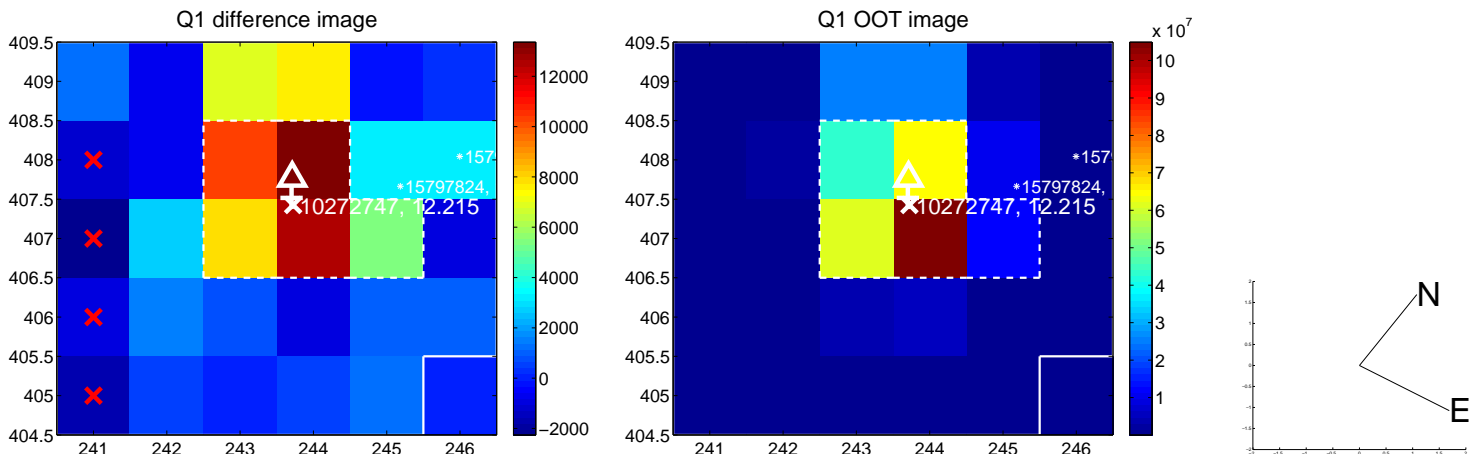
The direct PRF centroid is offset from the target star catalog position by about 0.38 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.401 ± 0.191	2.10	0.343 ± 0.181	-0.207 ± 0.216
PRF-fit source offset from KIC position	0.115 ± 0.341	0.34	0.083 ± 0.266	0.080 ± 0.266
photometric centroid source offset	1.57 ± 1.29	1.22	0.46 ± 1.24	1.50 ± 1.29

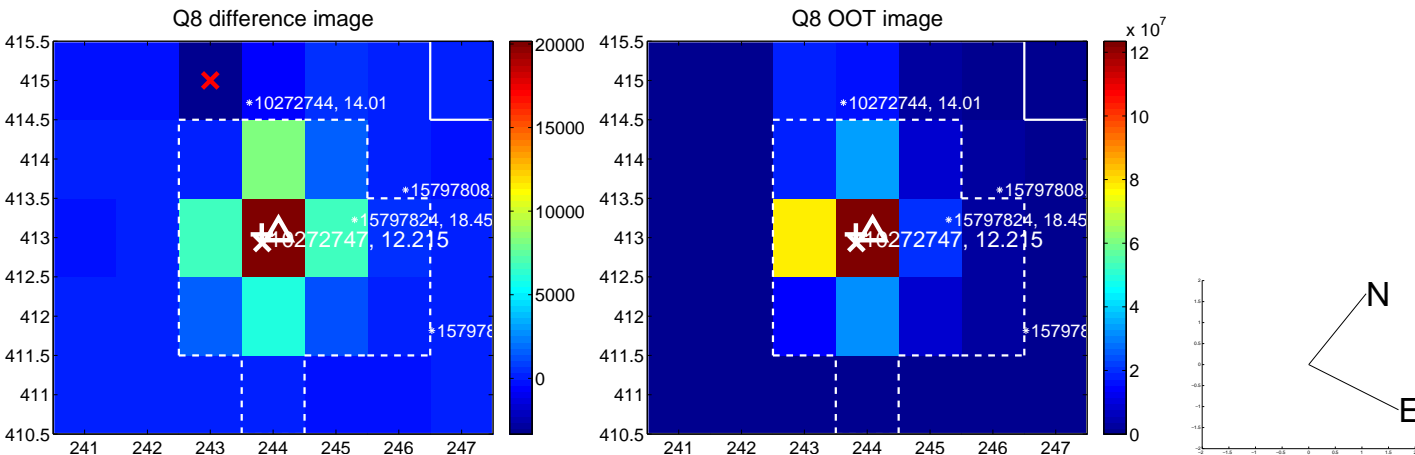
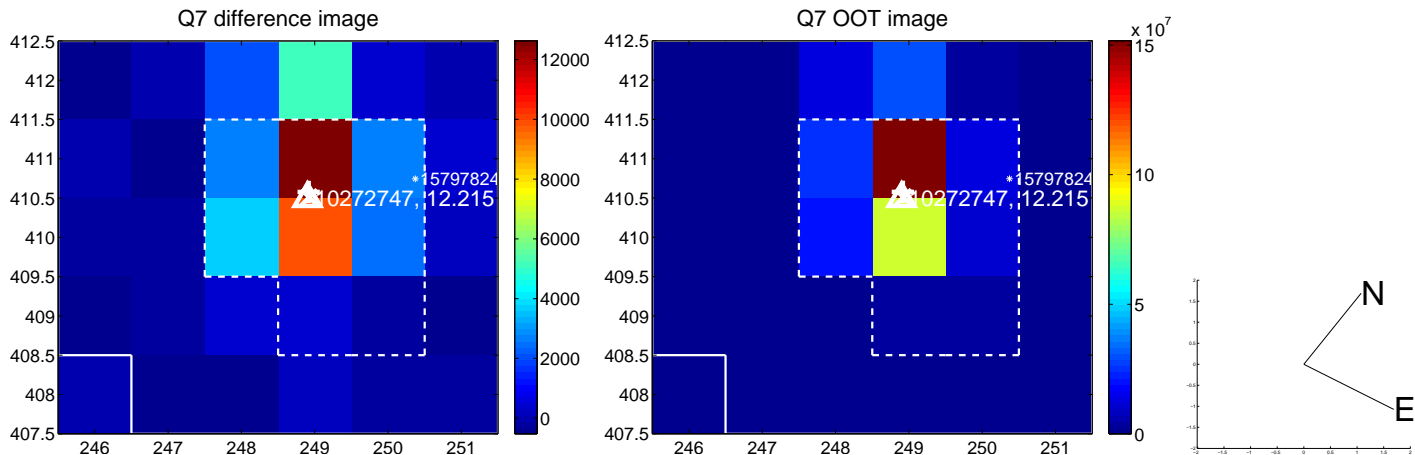
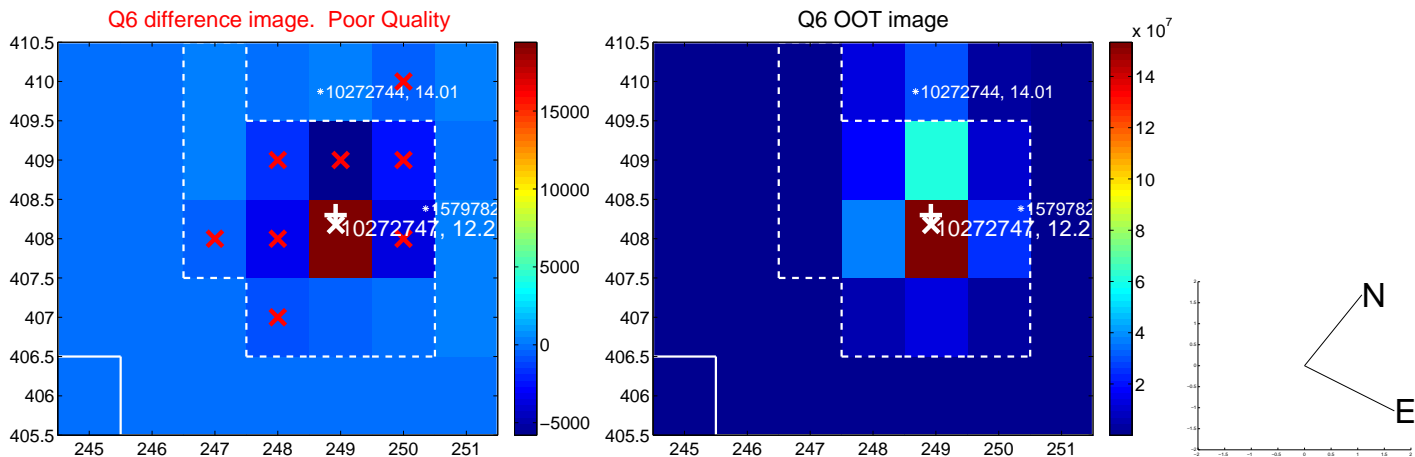
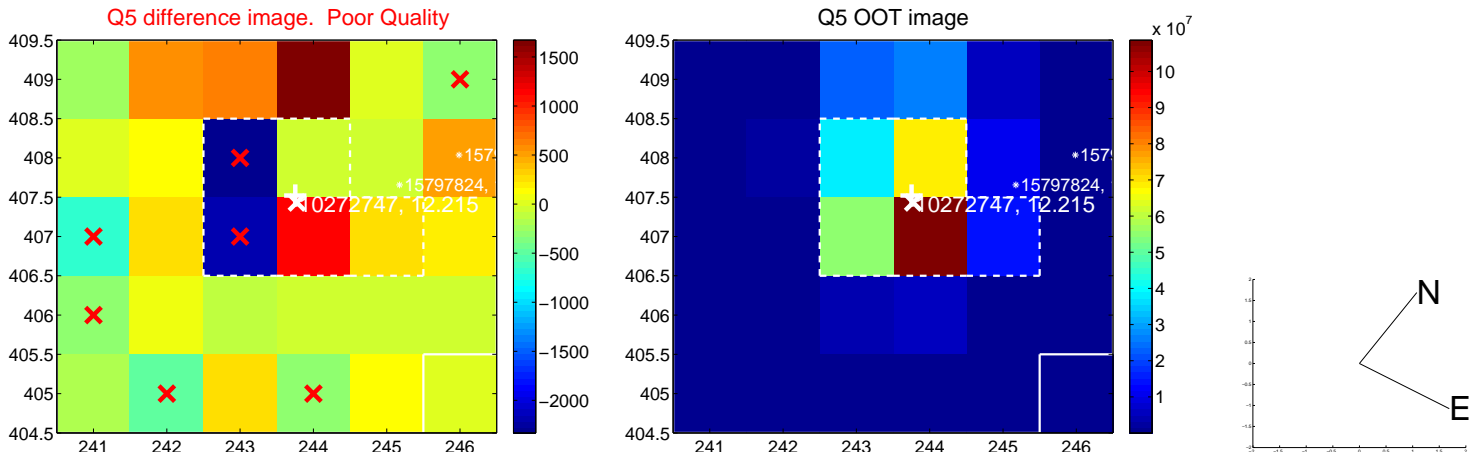


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

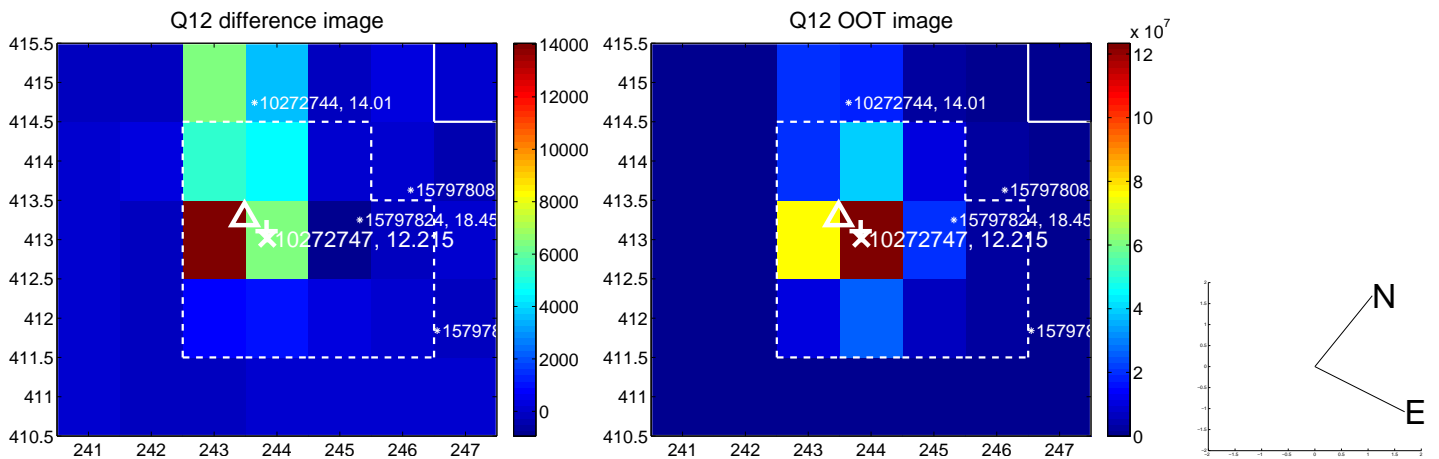
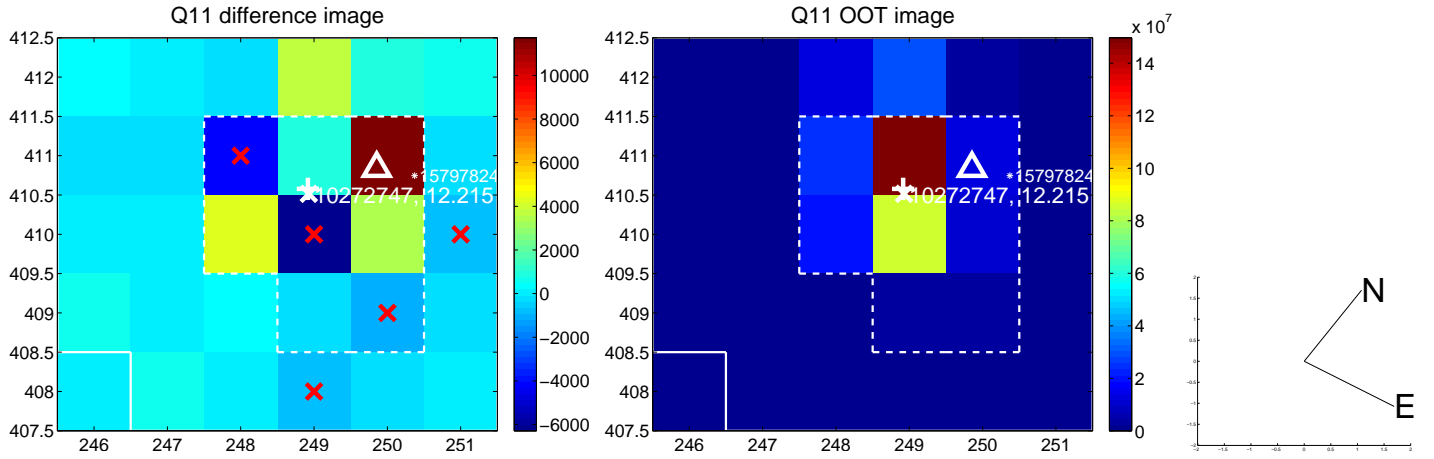
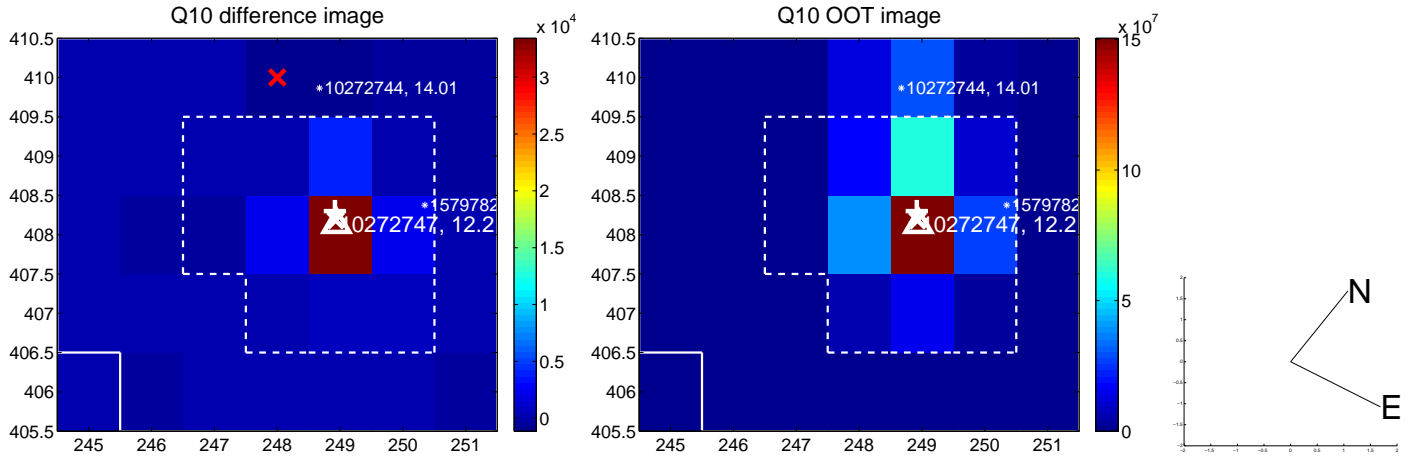
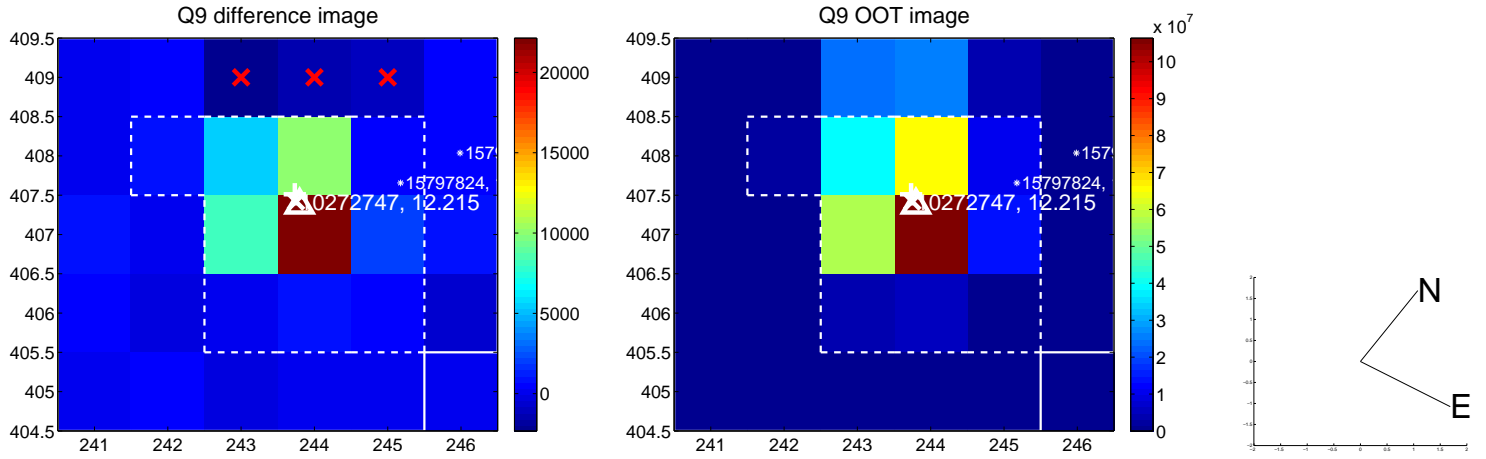
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



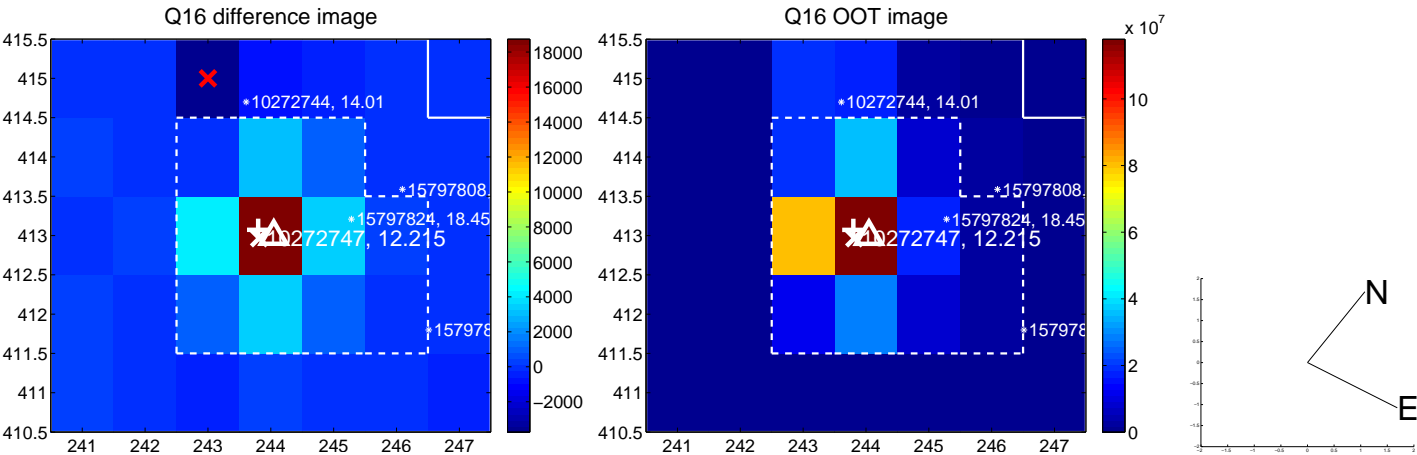
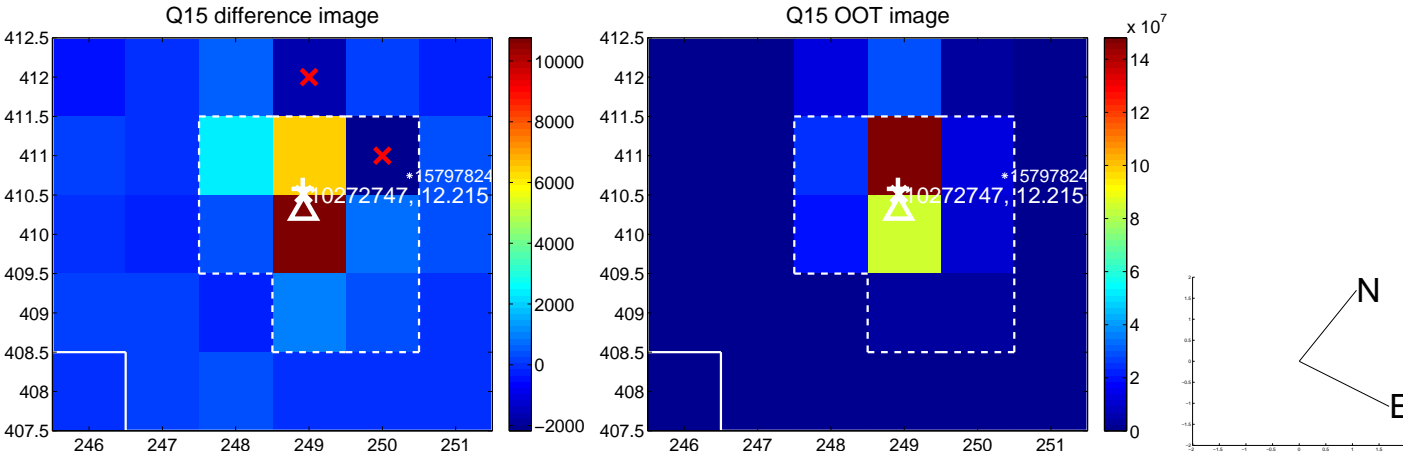
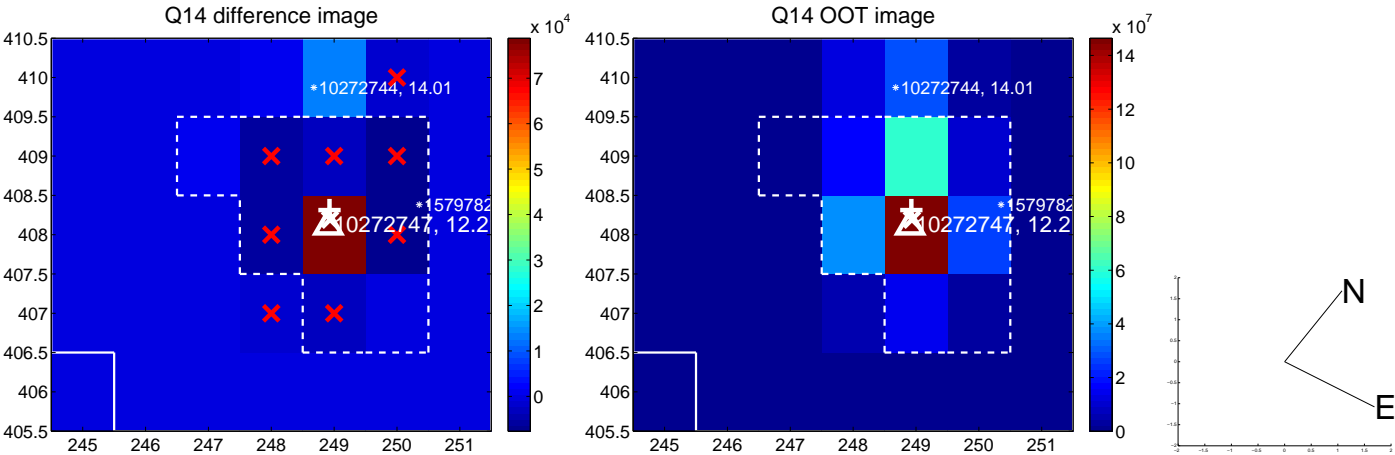
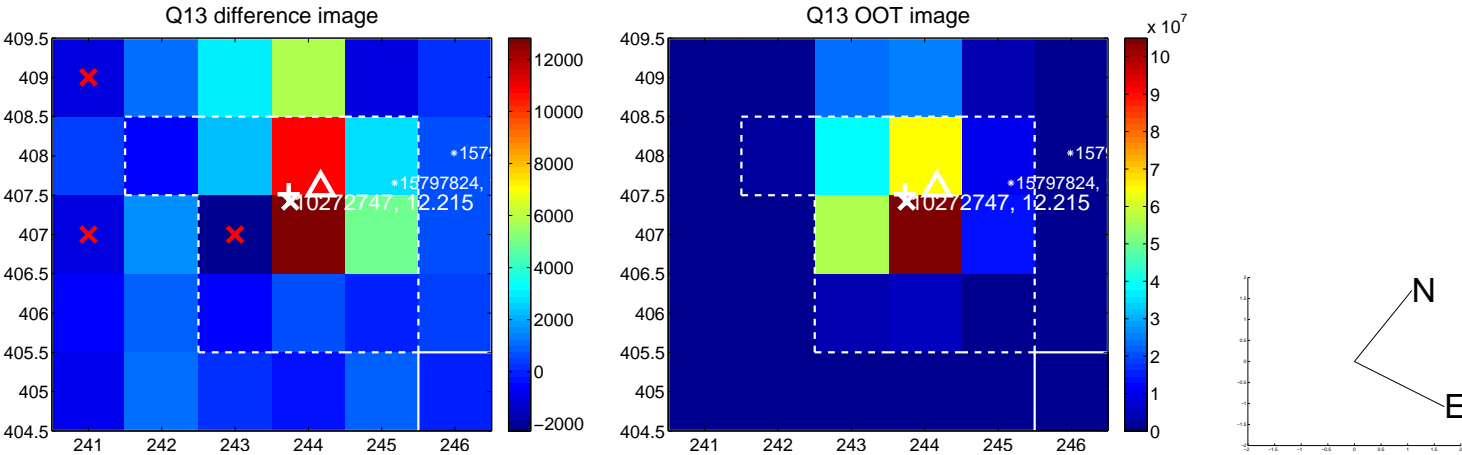
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



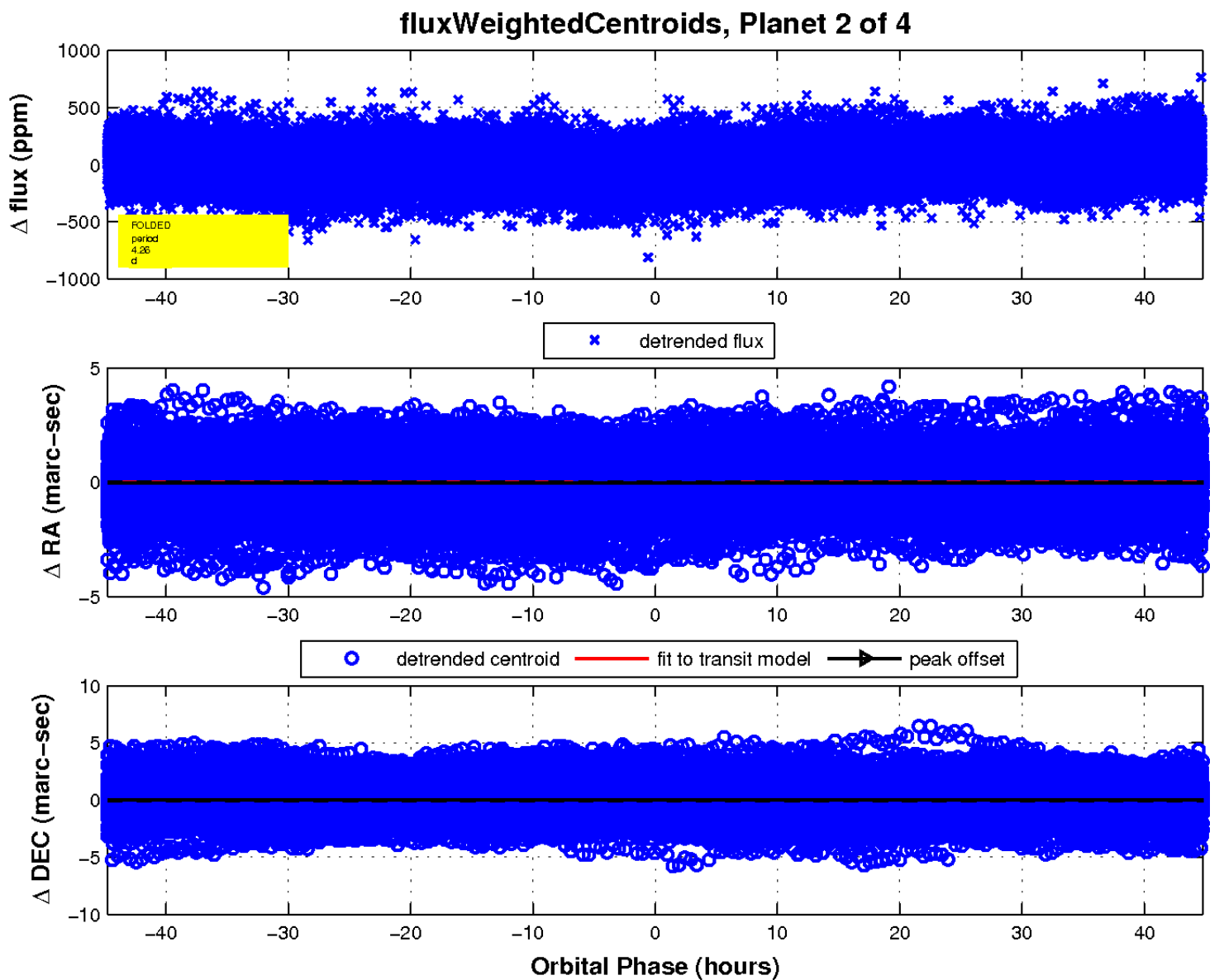
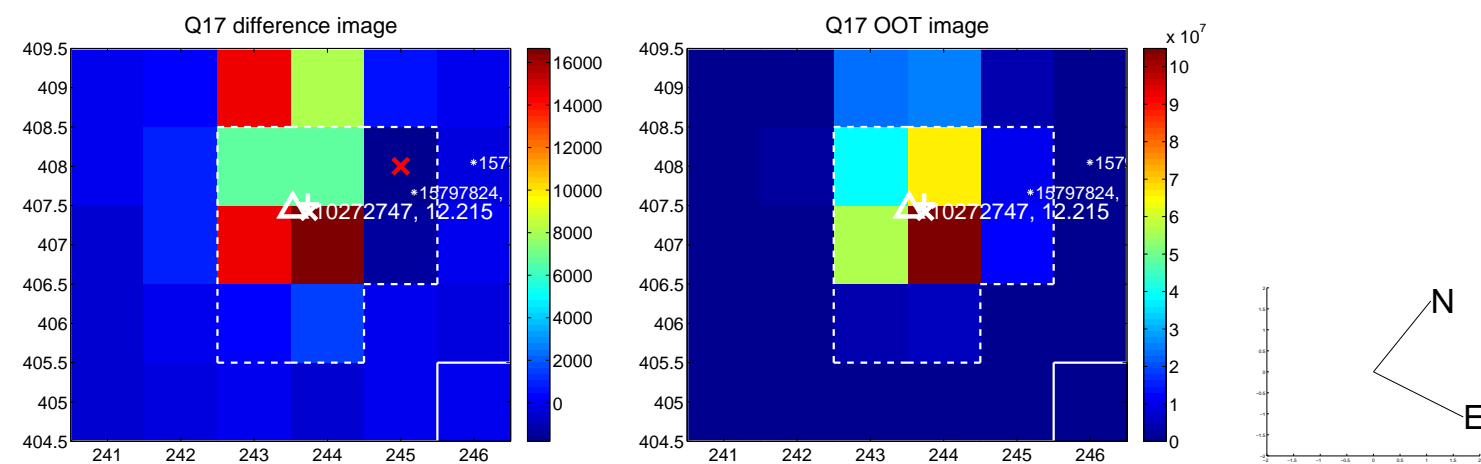
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

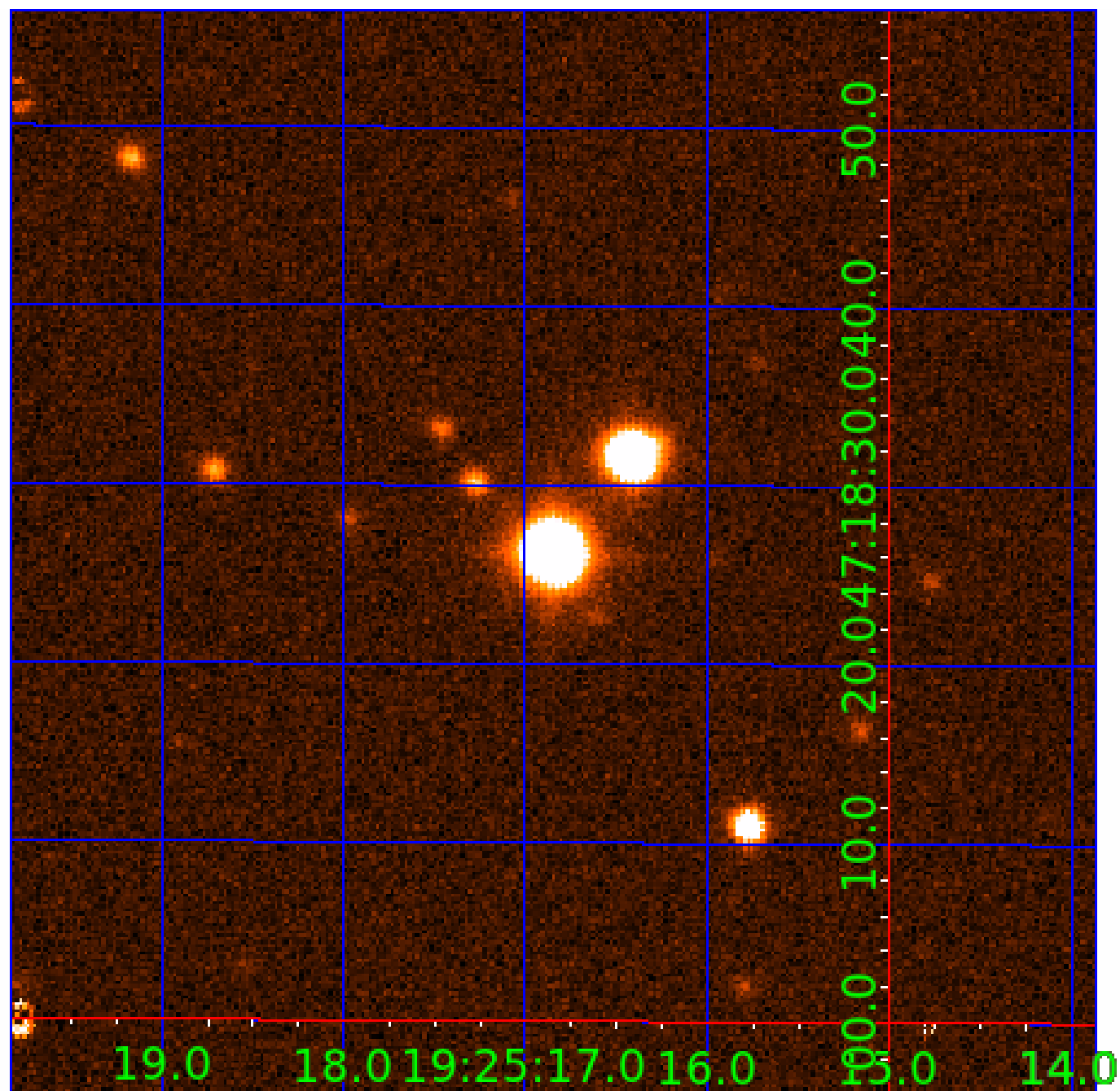


white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 010272747

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})
010272747-01	OBS	No	4.261915	133.381147	26.2	12.297	11.2	7.7	1.99	7313	1.18	2991.82
010272747-02	OBS	No	4.261801	135.460223	25.5	14.933	9.9	8.3	1.99	7313	1.17	2991.93
010272747-03	OBS	No	127.293919	230.783382	193.7	20.159	9.7	6.7	1.99	7313	3.02	32.28
010272747-04	OBS	No	12.785563	141.318636	167.8	27.321	8.7	12.7	1.99	7313	5.00	691.48

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010272747-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—MOD_NONUNIQ_DV—CENT_KIC_POS
010272747-02	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_KIC_POS
010272747-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
010272747-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_KIC_POS

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

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

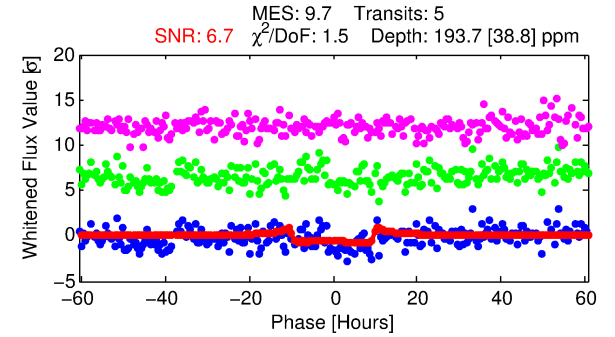
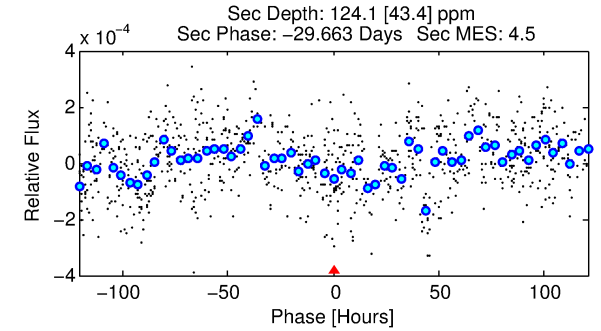
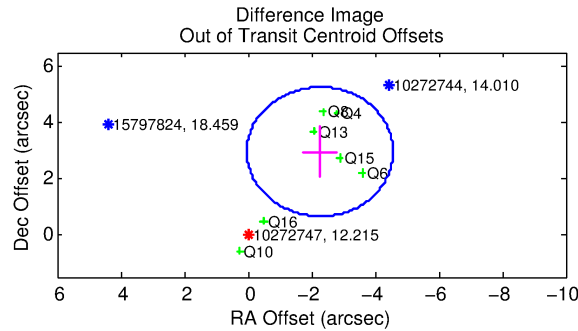
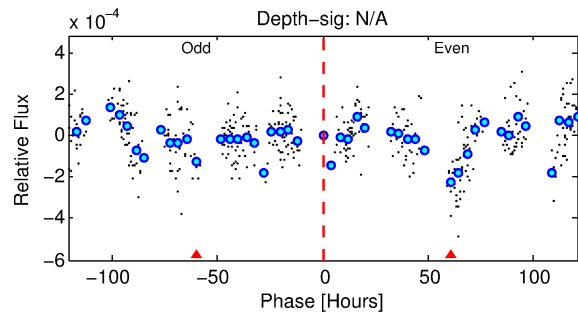
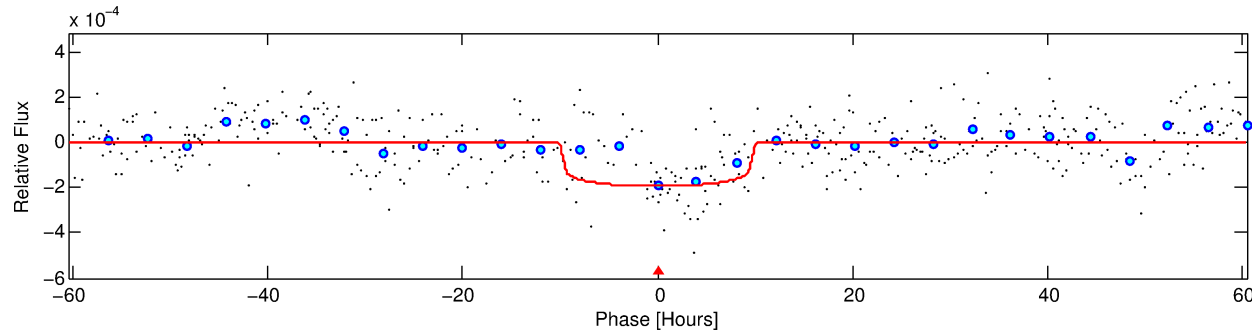
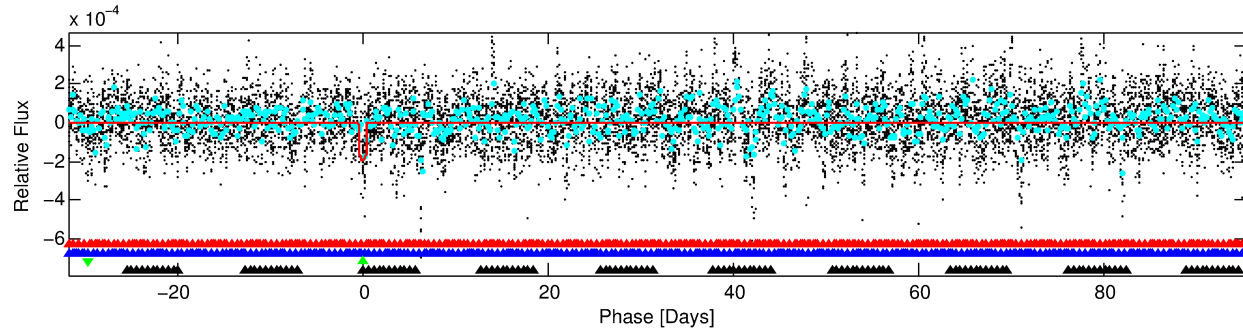
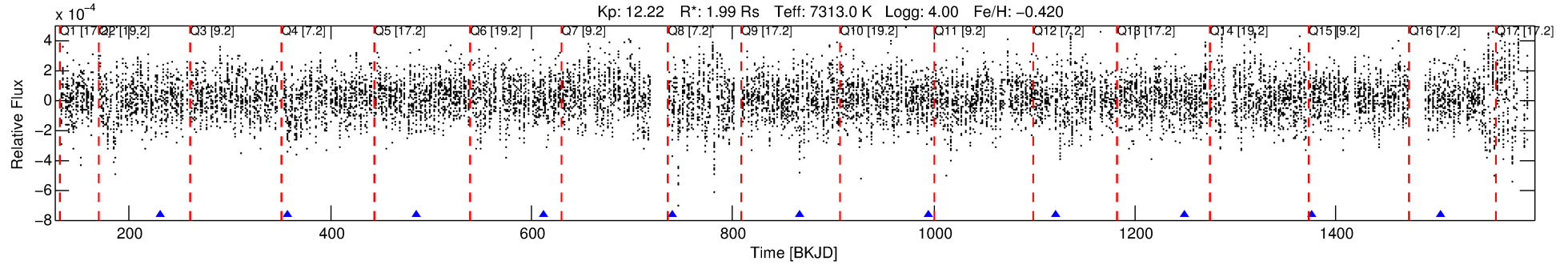
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010272747-03

No Significant Match Found

DV One-Page Summary

KIC: 10272747 Candidate: 3 of 4 Period: 127.294 d



DV Fit Results:

Period = 127.29392 [0.00861] d
Epoch = 230.7834 [0.0569] BKJD
Rp/R* = 0.0139 [0.0033]
a/R* = 31.89 [39.16]
b = 0.77 [0.65]
Seff = 32.28 [17.60]
Teq = 608 [83] K
Rp = 3.02 [1.28] Re
a = 0.5598 [0.1847] AU
Ag = 2353.05 [1840.33] [1.28σ]
Teffp = 6545 [997] K [5.94σ]

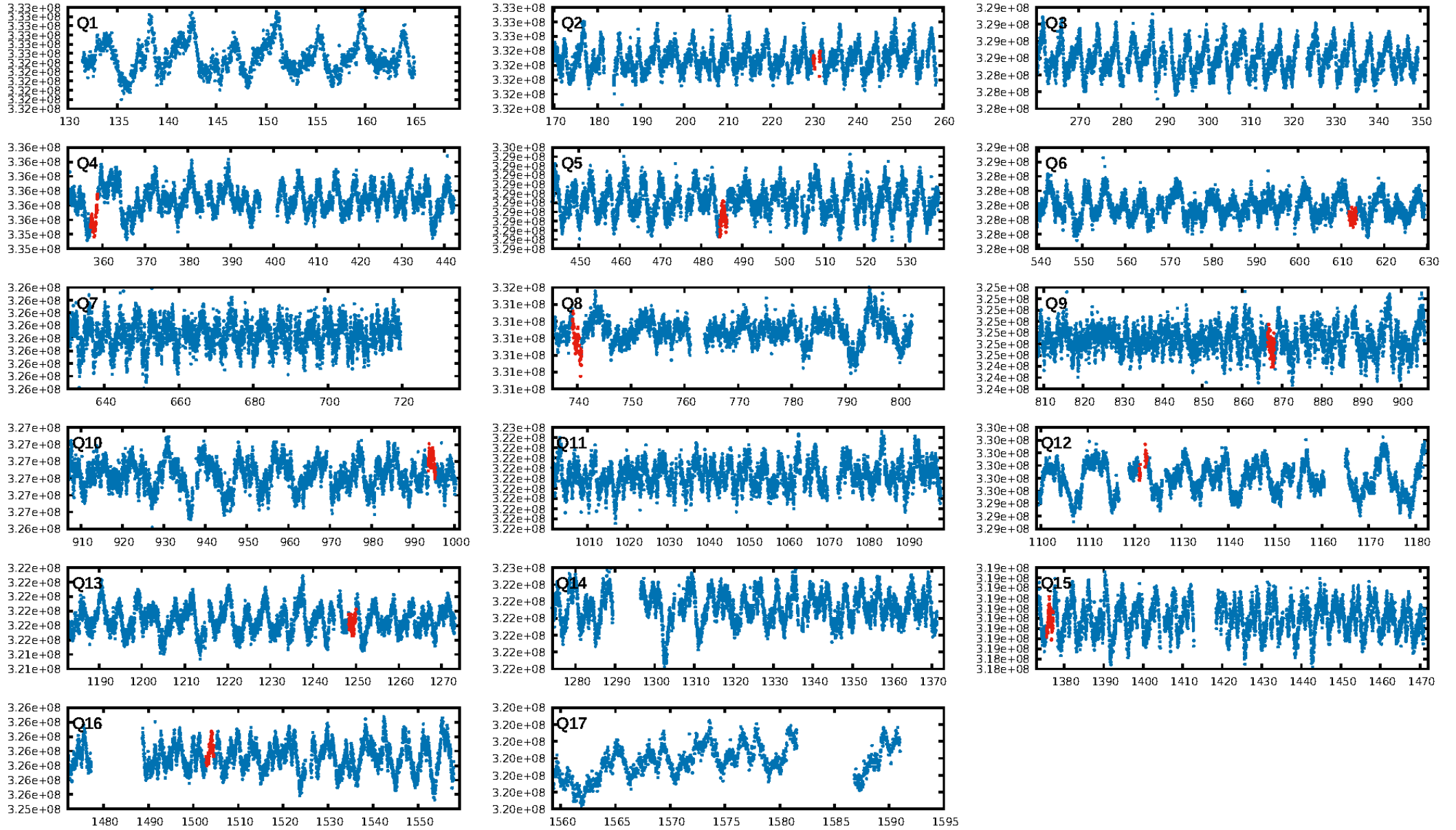
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [80.94σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 2.65e-13
RollingBand-fgt: 1.00 [5/5]
GhostDiagnostic-chr: -32.56
Centroid-sig: 0.2%
Centroid-so: 1.915 arcsec [1.75σ]
OotOffset-rm: 3.725 arcsec [4.86σ]
KicOffset-rm: 4.092 arcsec [5.50σ]
OotOffset-st: 2/1/3/1 [7]
KicOffset-st: 2/1/3/1 [7]
DiffImageQuality-fgm: 0.43 [3/7]
DiffImageOverlap-fno: 0.00 [0/9]

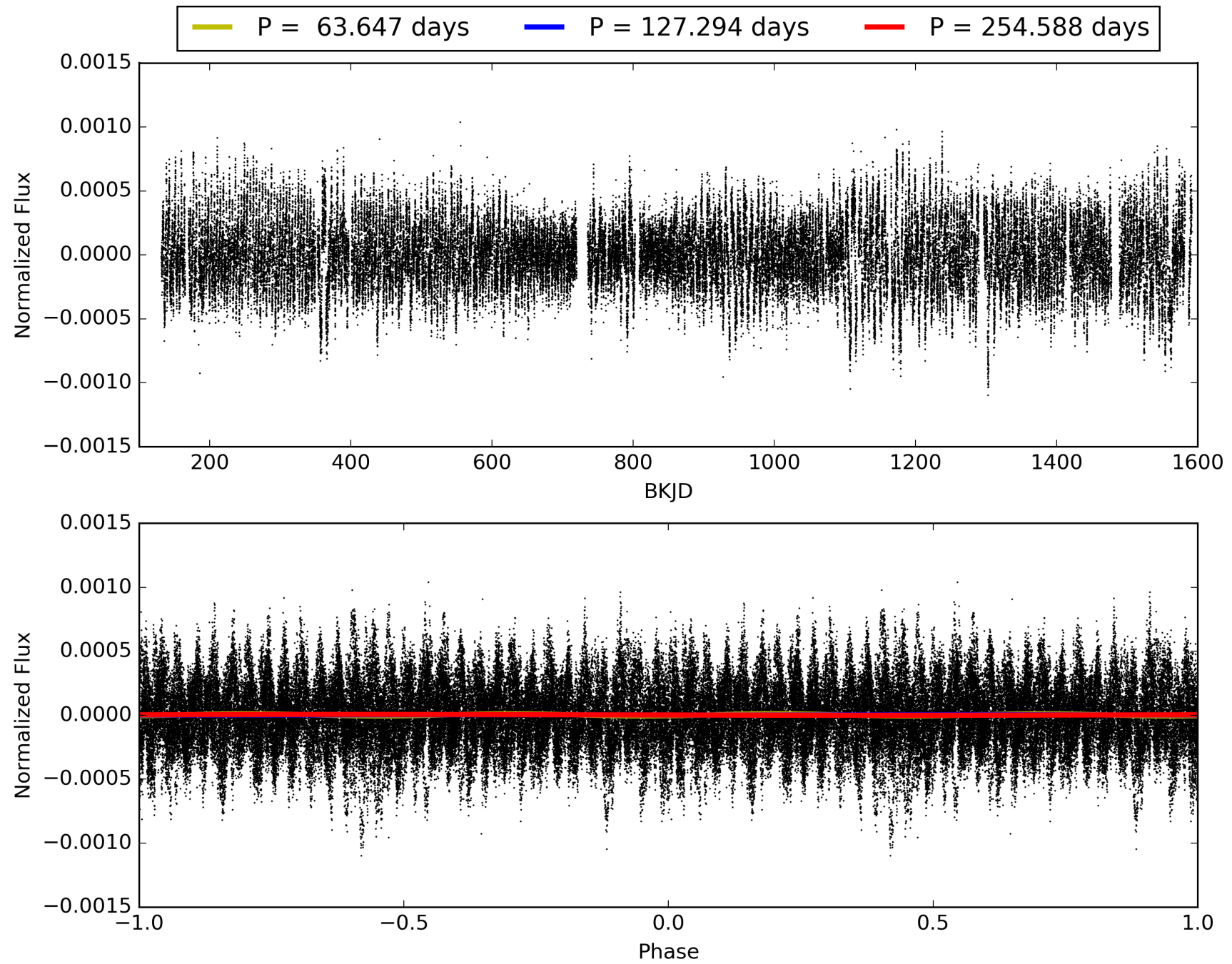
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 15:38:26 Z

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

TCE 010272747-03, PDC Light Curves

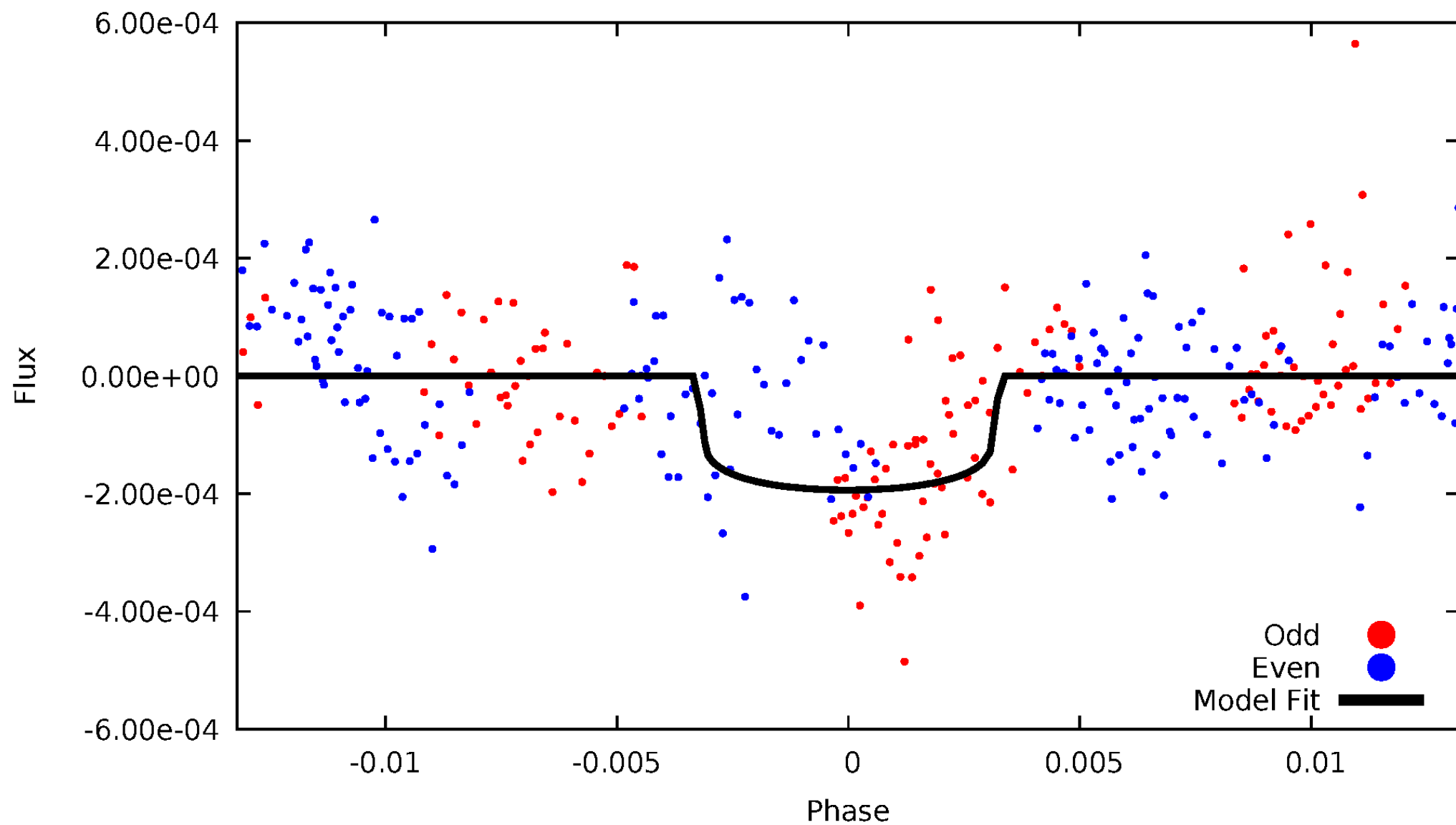


TCE 010272747-03



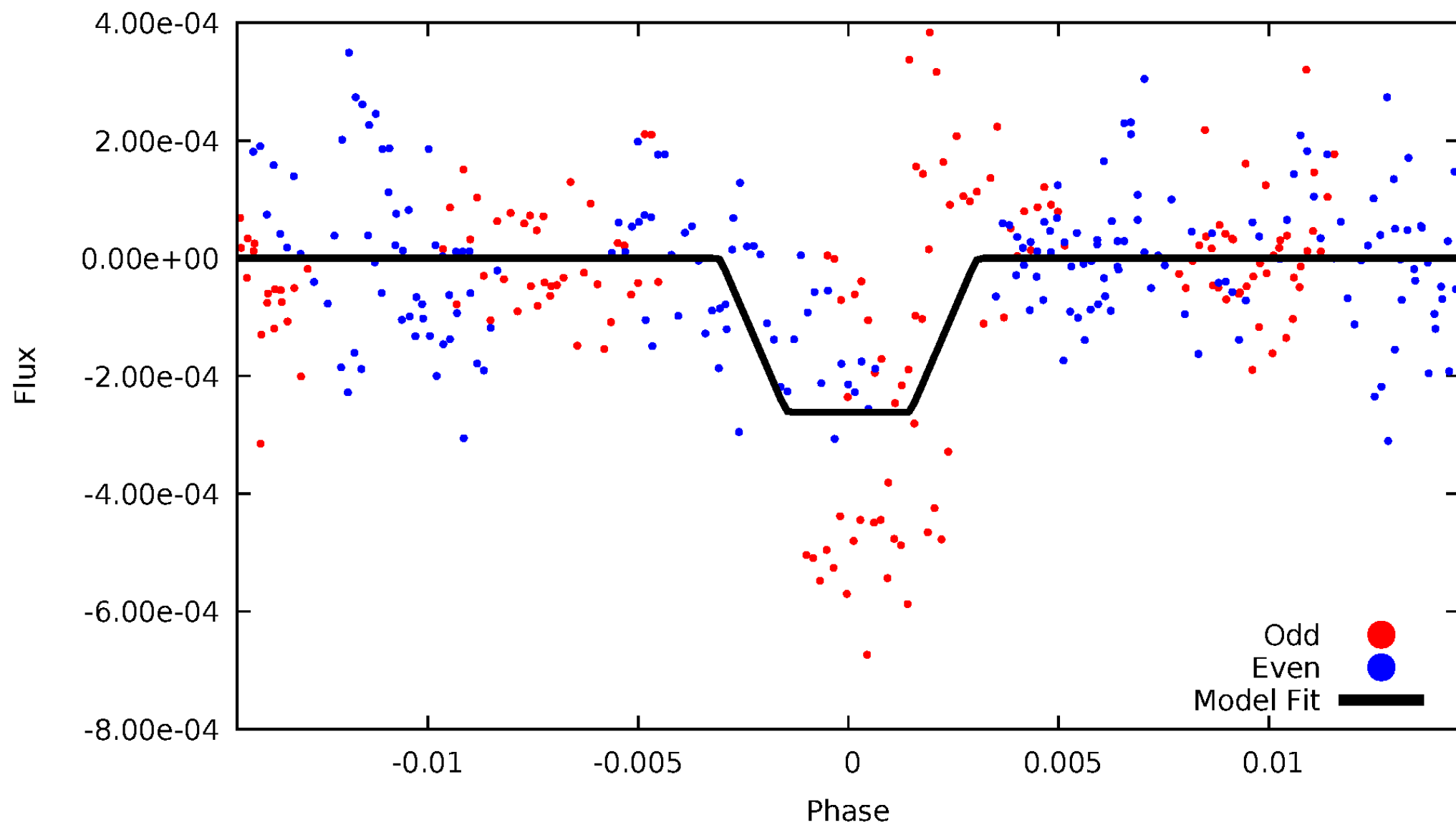
DV Odd/Even

TCE 010272747-03



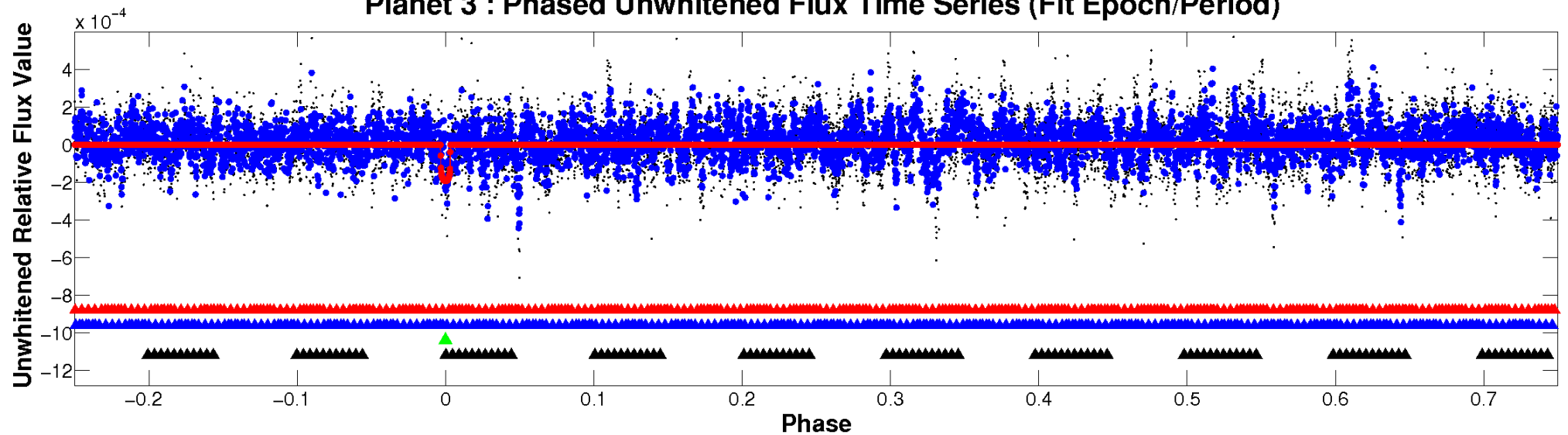
ALT Odd/Even

TCE 010272747-03

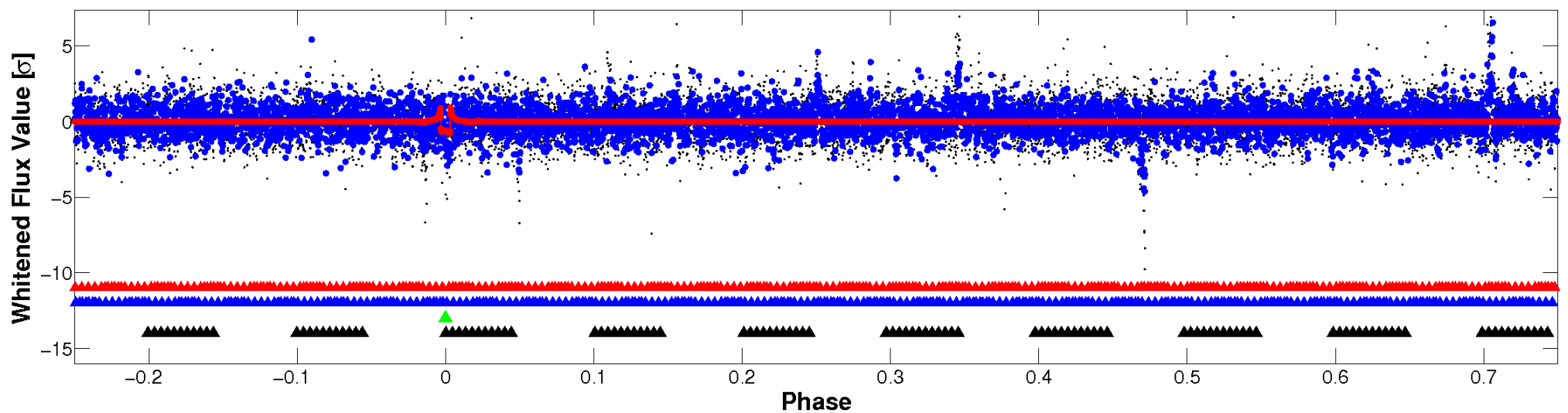


Non-Whitened Vs. Whitened Light Curve

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

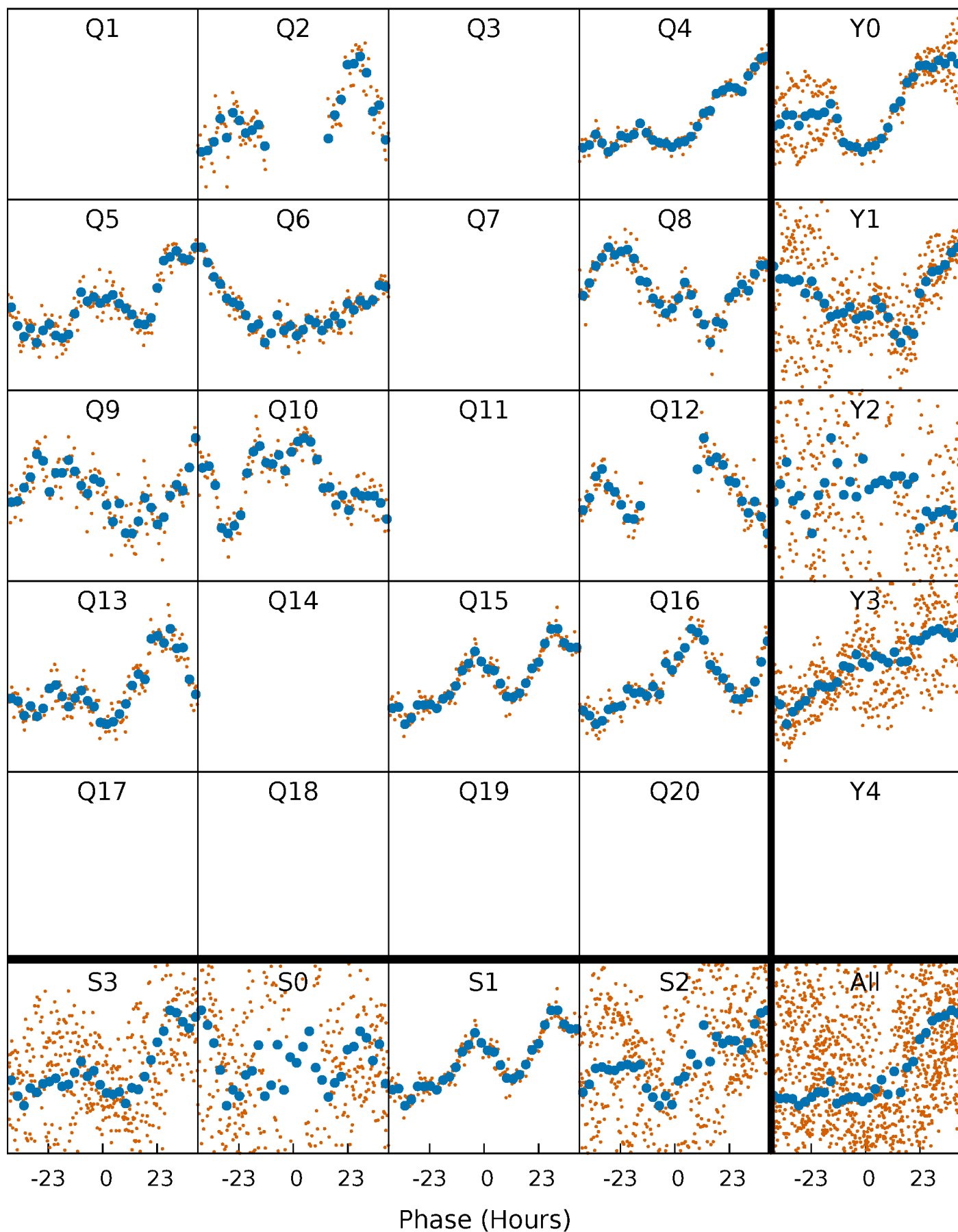


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



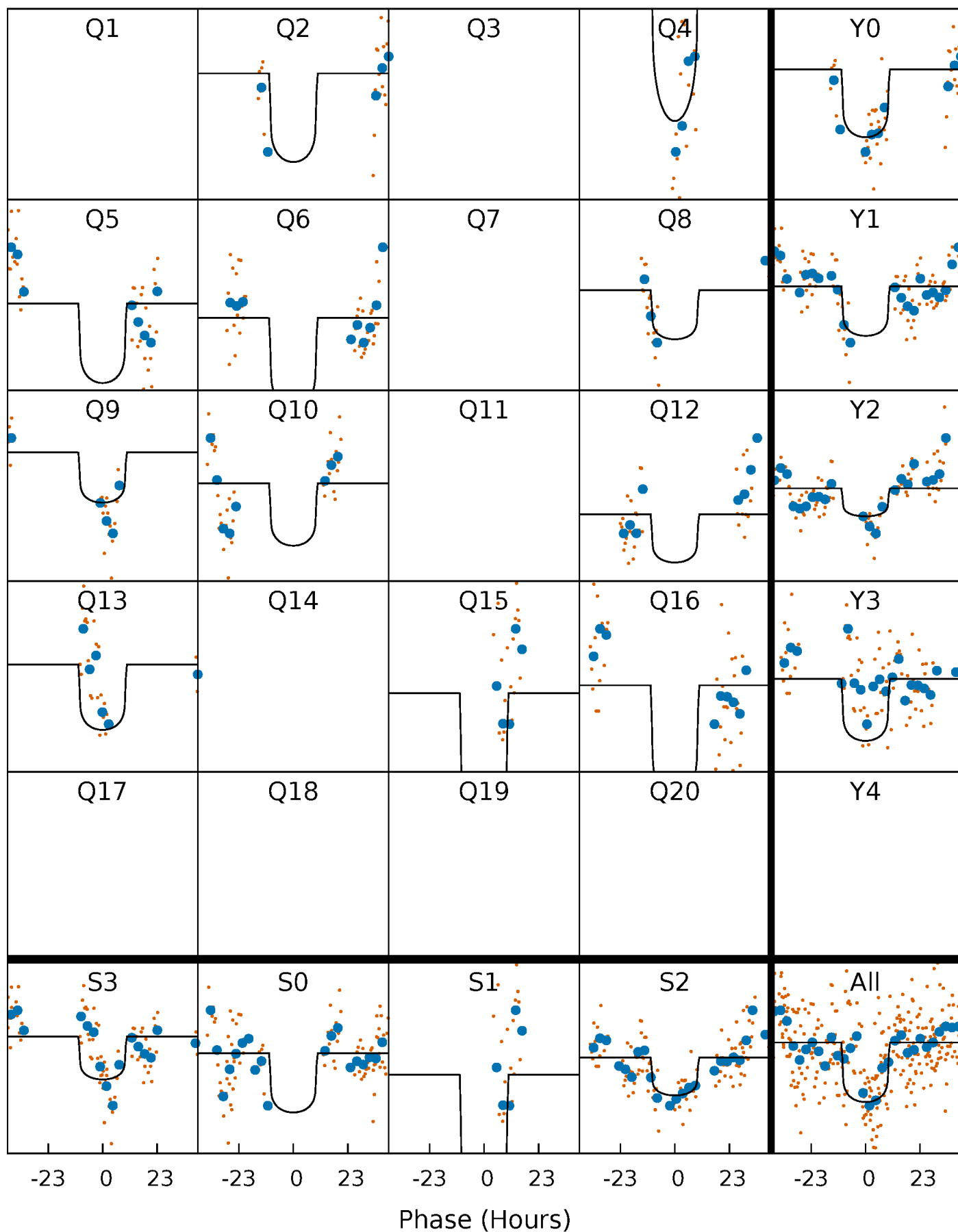
PDC Quarter-Phased Transit Curves

TCE 010272747-03 $P=127.293919$ Days $T_0=230.783382$ (BKJD)



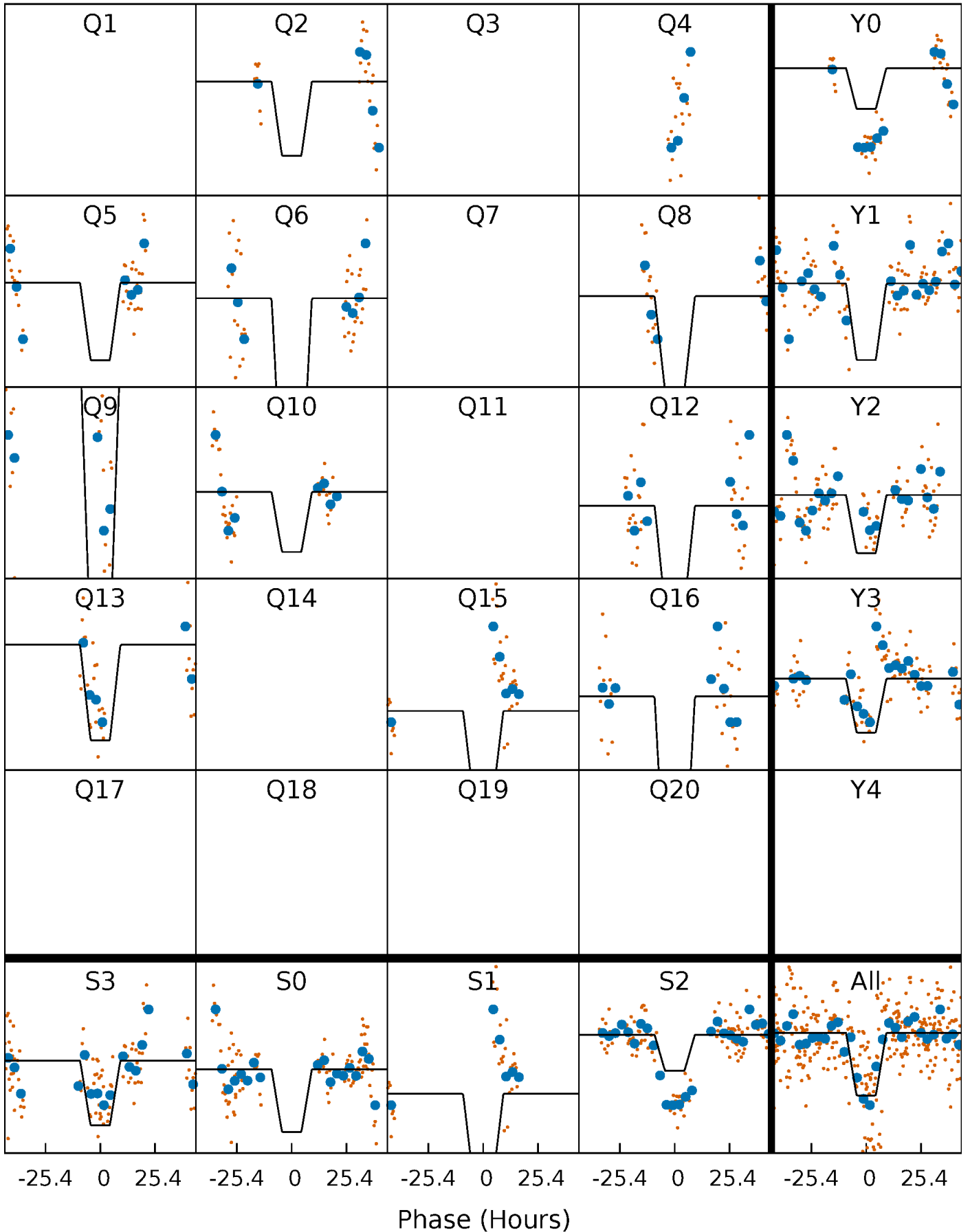
DV Quarter-Phased Transit Curves

TCE 010272747-03 $P=127.293919$ Days $T_0=230.783382$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

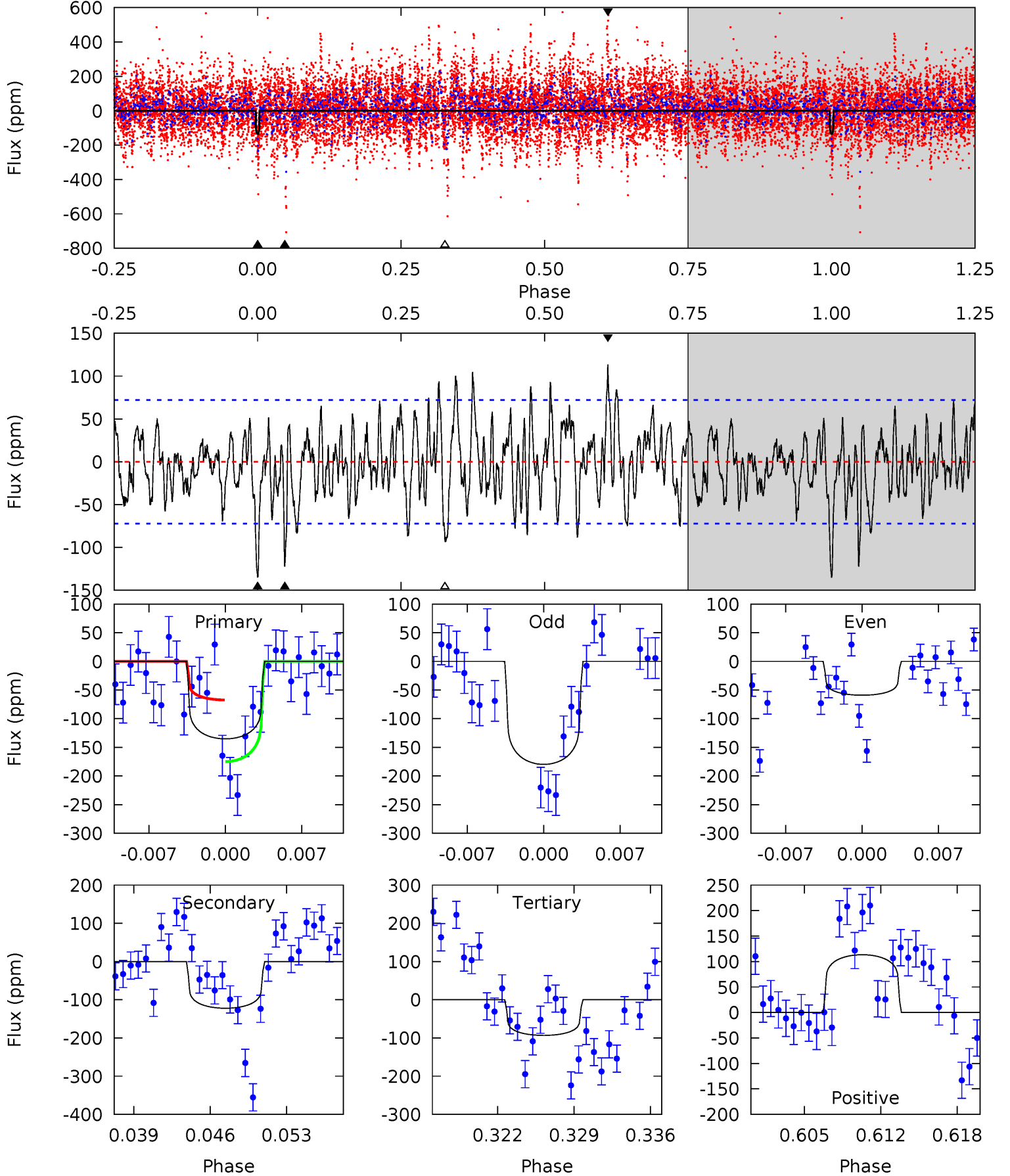
TCE 010272747-03 $P=127.280645$ Days $T_0=230.883304$ (BKJD)



DV Model-Shift Uniqueness Test

010272747-03, P = 127.293919 Days, E = 103.489463 Days

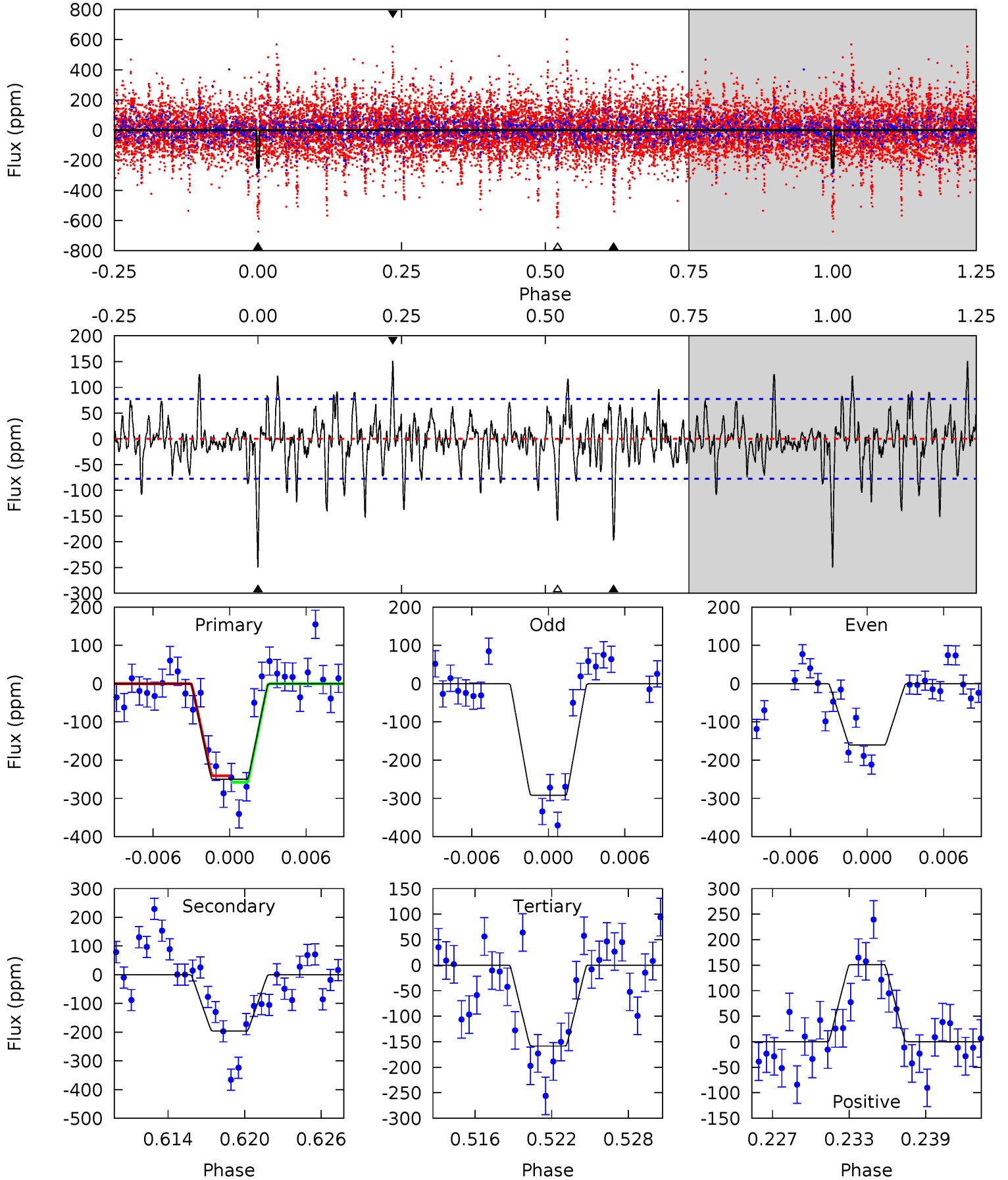
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.57	8.65	6.60	8.02	5.11	2.72	2.55	2.97	1.55	2.05	0.62	4.13	0.78	0.46	3.70



Alt Model-Shift Uniqueness Test

010272747-03, P = 127.280645 Days, E = 103.602659 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.5	12.9	10.5	9.97	5.12	2.74	2.62	6.05	6.54	2.48	2.97	4.25	1.55	0.38	0.56



Stellar Parameters For KIC 010272747

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	7313^{+205}_{-307}	$4.001^{+0.301}_{-0.150}$	$-0.420^{+0.250}_{-0.300}$	$1.987^{+0.468}_{-0.702}$	$1.444^{+0.193}_{-0.289}$	$0.259^{+0.536}_{-0.109}$
	+3%/-4%	+8%/-4%	+60%/-71%	+24%/-35%	+13%/-20%	+207%/-42%
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 010272747-03 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-122 ± 14	$2.87^{+0.82}_{-0.78}$	834^{+64}_{-76}	6463^{+1018}_{-718}	2559^{+2191}_{-1077}
Alt.	-196 ± 15	$3.27^{+0.96}_{-0.86}$	835^{+67}_{-81}	6720^{+1055}_{-655}	2995^{+2716}_{-1148}

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

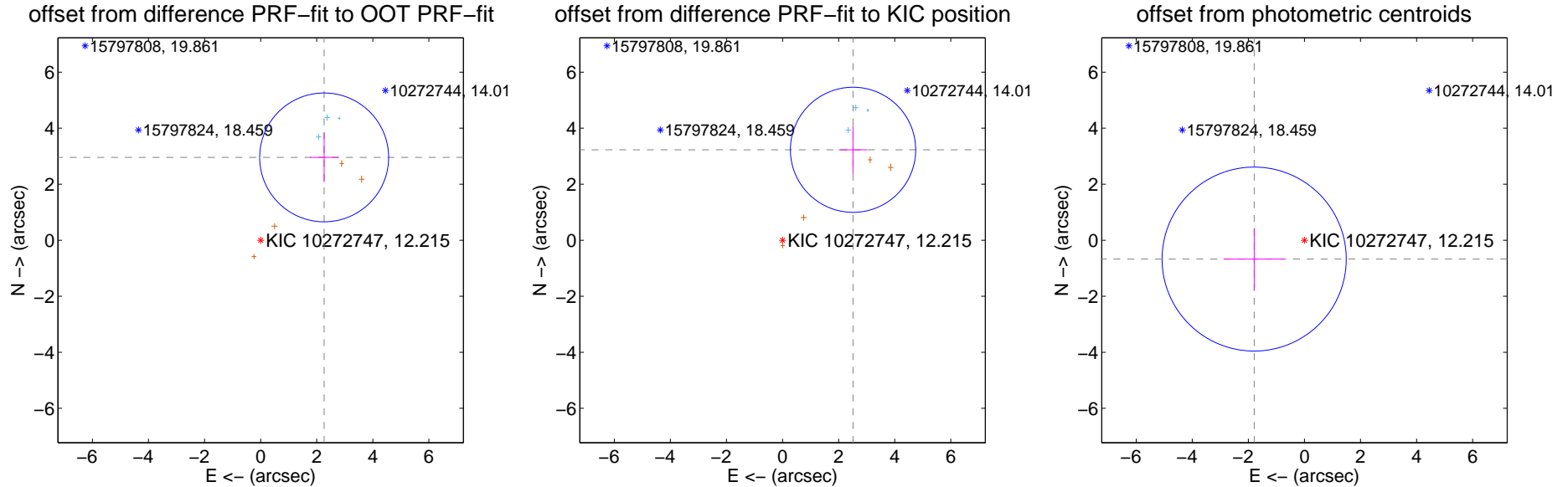
DV Centroid Data

Supplemental centroid analysis for 010272747-03. Kepler magnitude: 12.21. Transit SNR 6.69

There are 3 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.40 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	3.725 ± 0.767	4.86	-2.265 ± 0.510	2.957 ± 0.883
PRF-fit source offset from KIC position	4.092 ± 0.745	5.50	-2.514 ± 0.508	3.229 ± 0.857
photometric centroid source offset	1.91 ± 1.09	1.75	1.79 ± 1.09	-0.67 ± 1.11



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

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

Q1 no difference image



Q1 no OOT image



Q2 no difference image



Q2 no OOT image



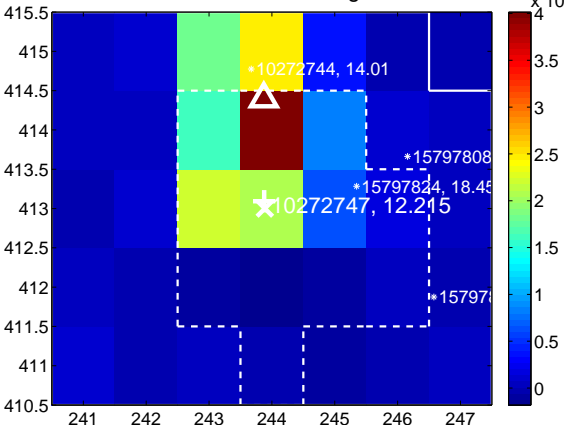
Q3 no difference image



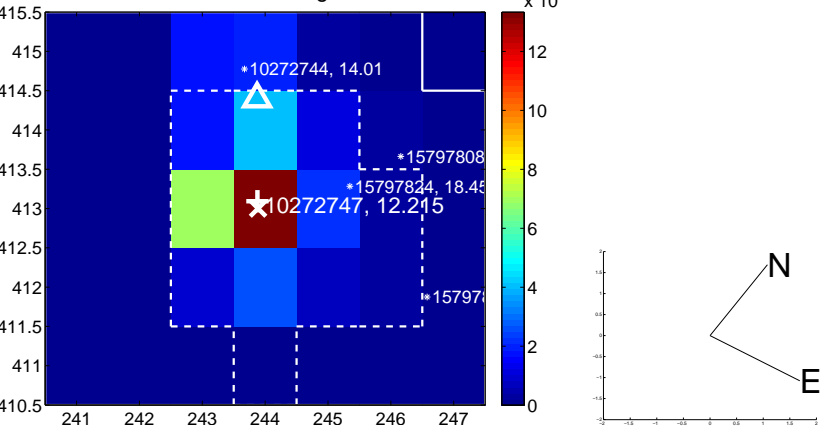
Q3 no OOT image



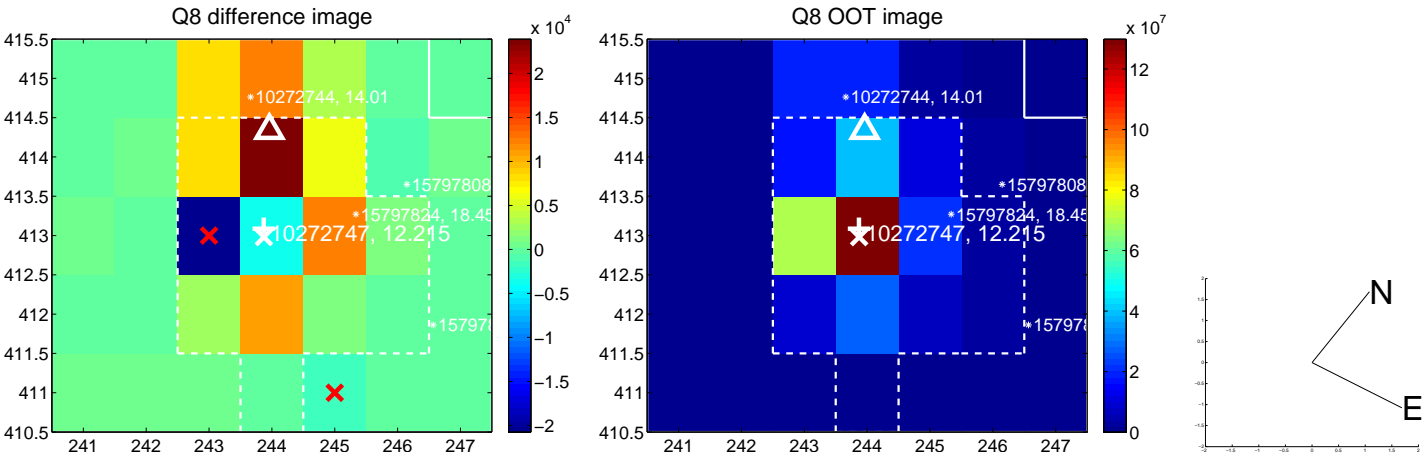
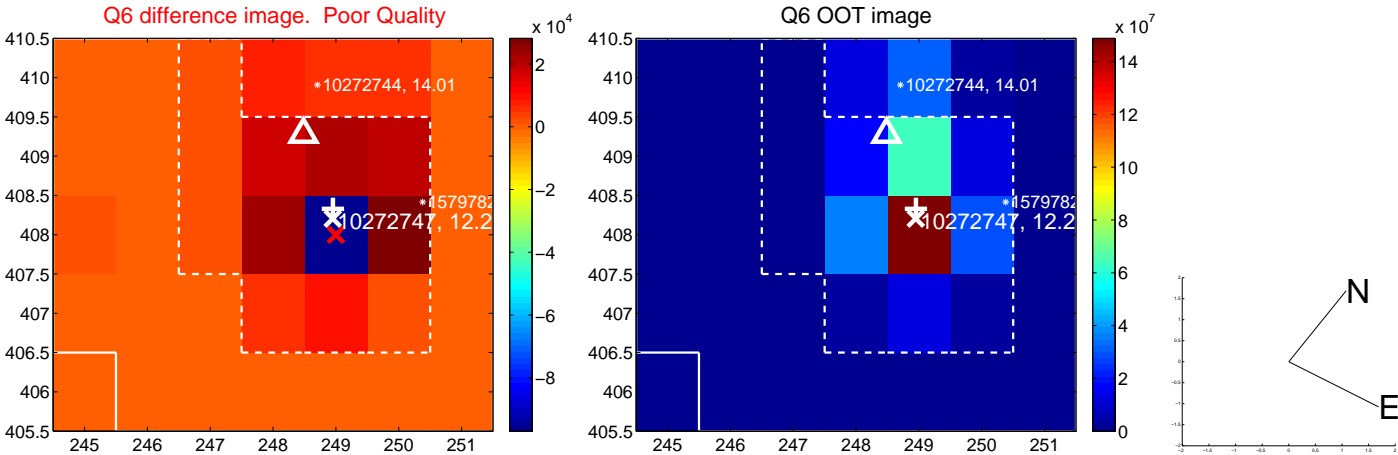
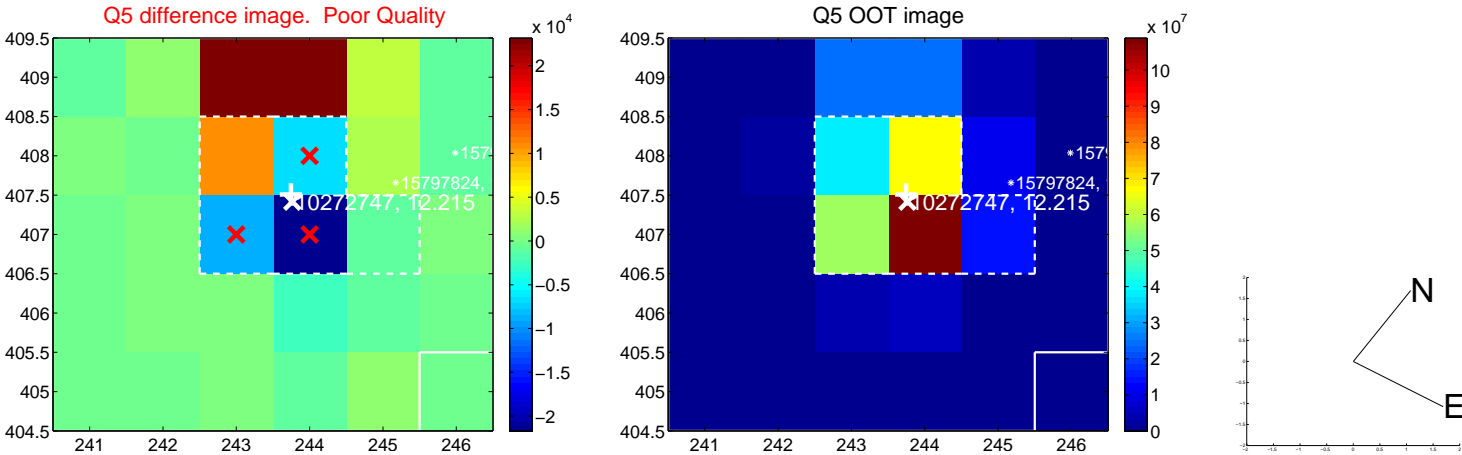
Q4 difference image



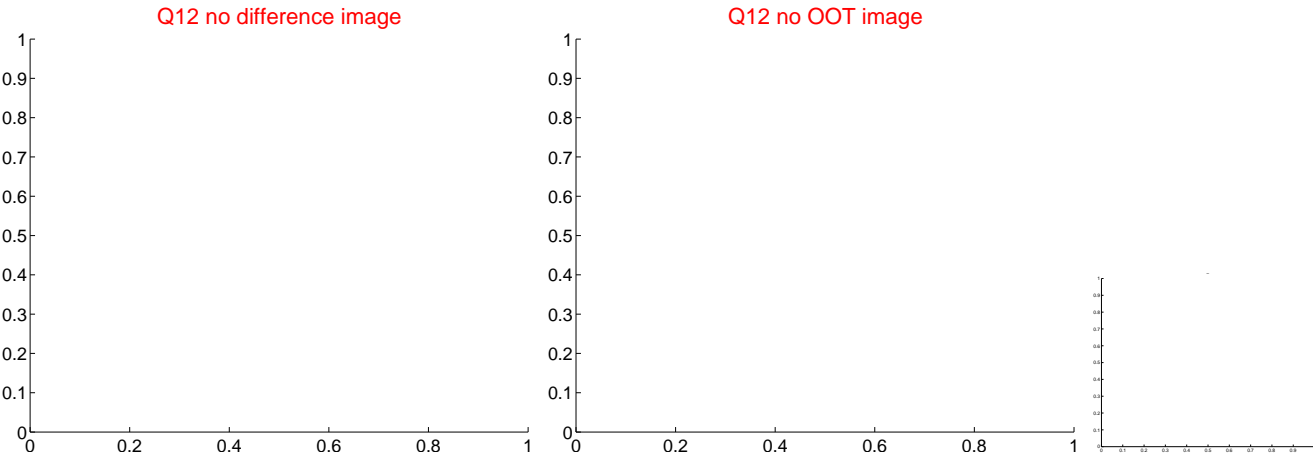
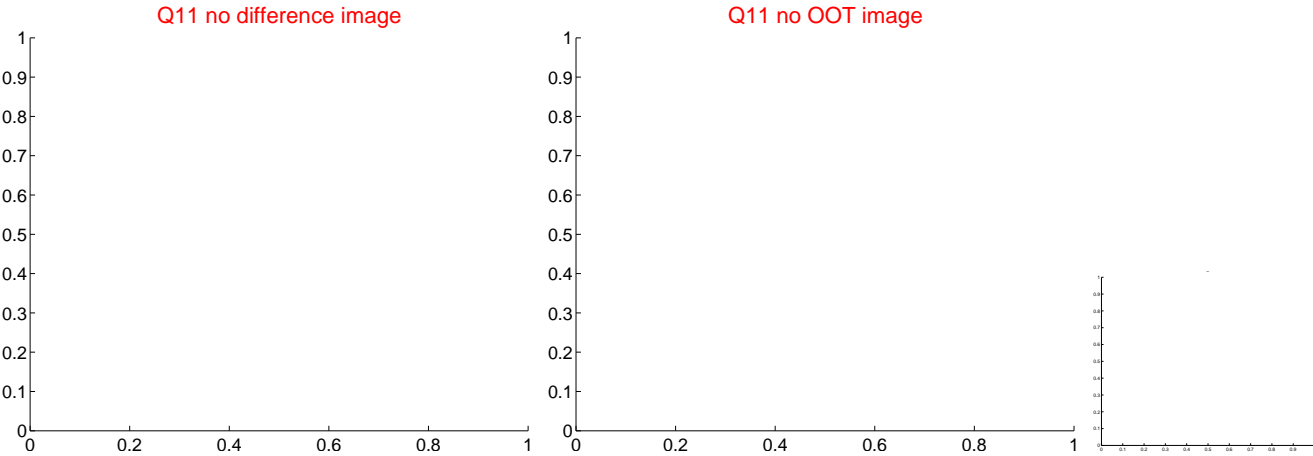
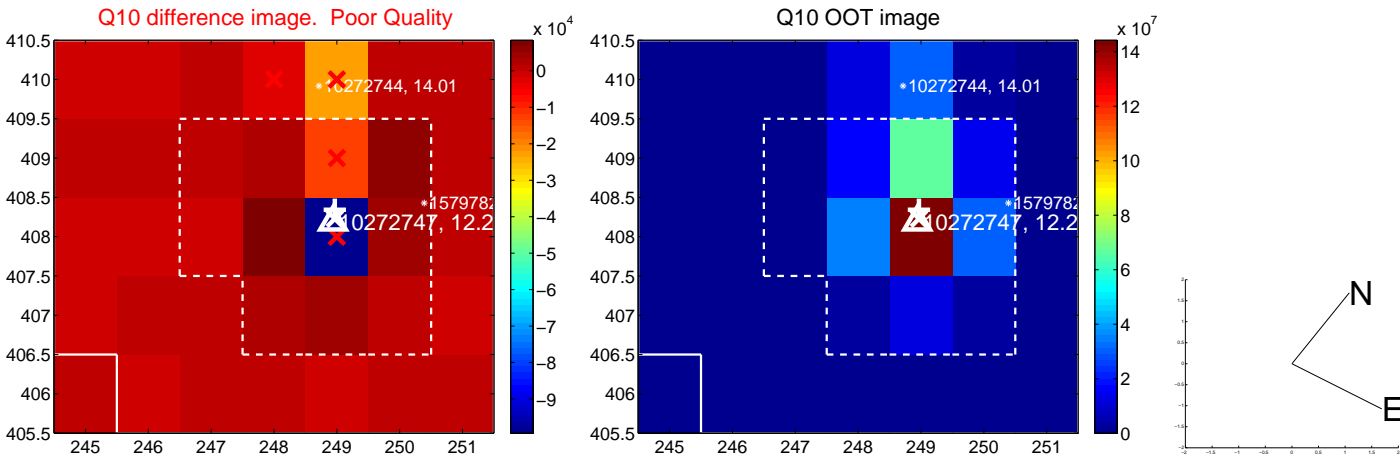
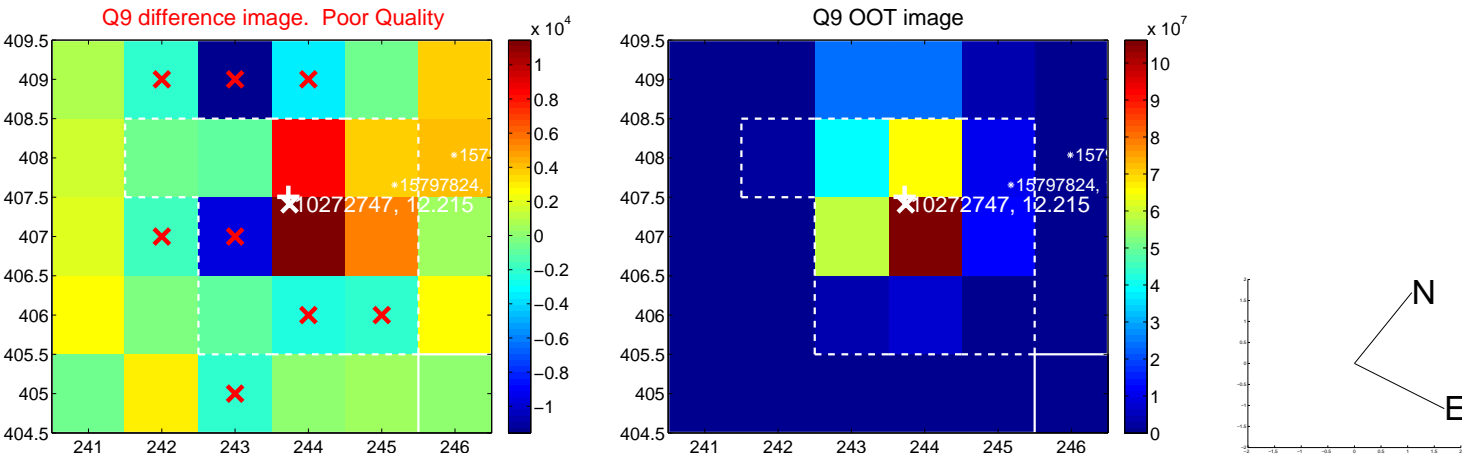
Q4 OOT image



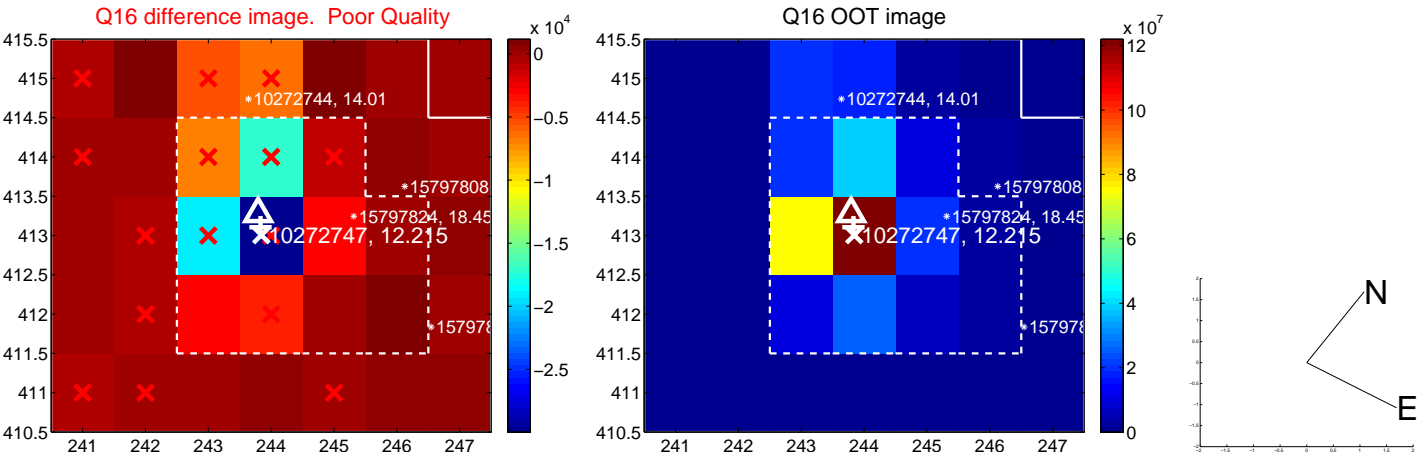
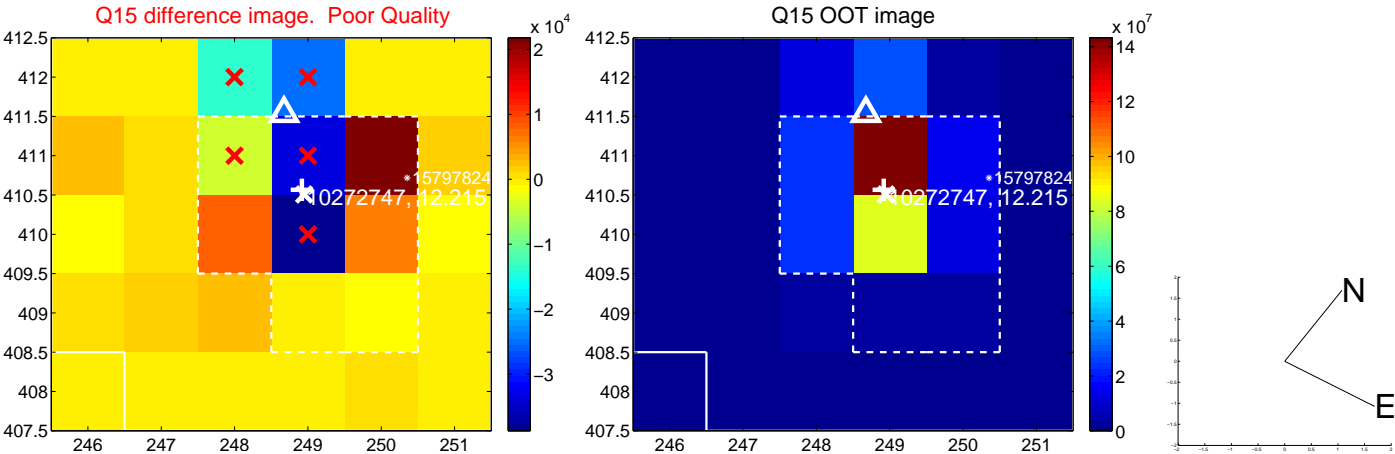
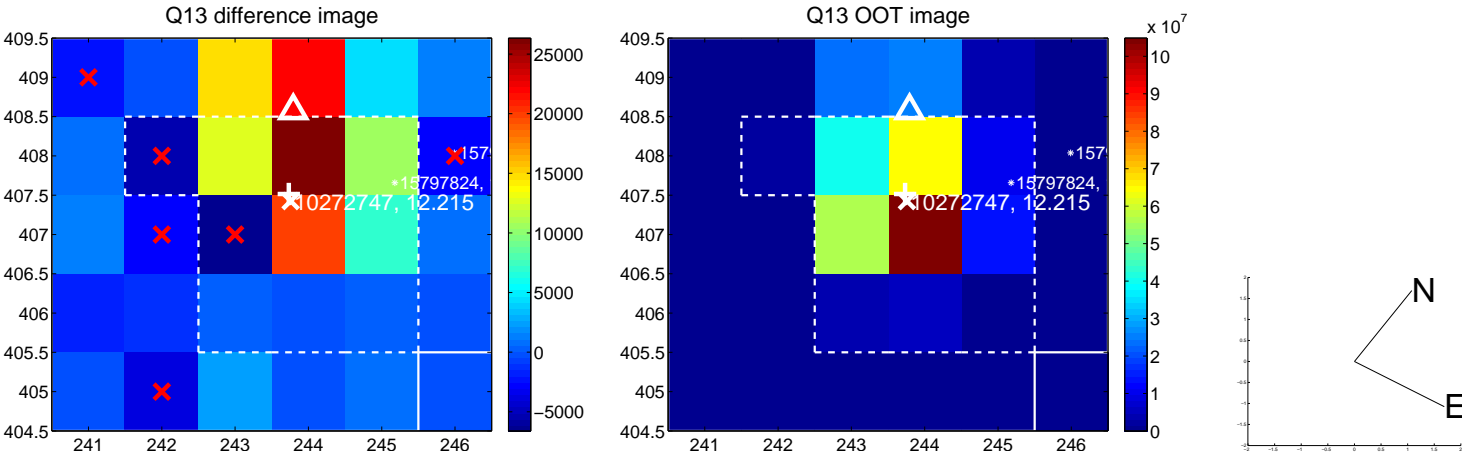
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



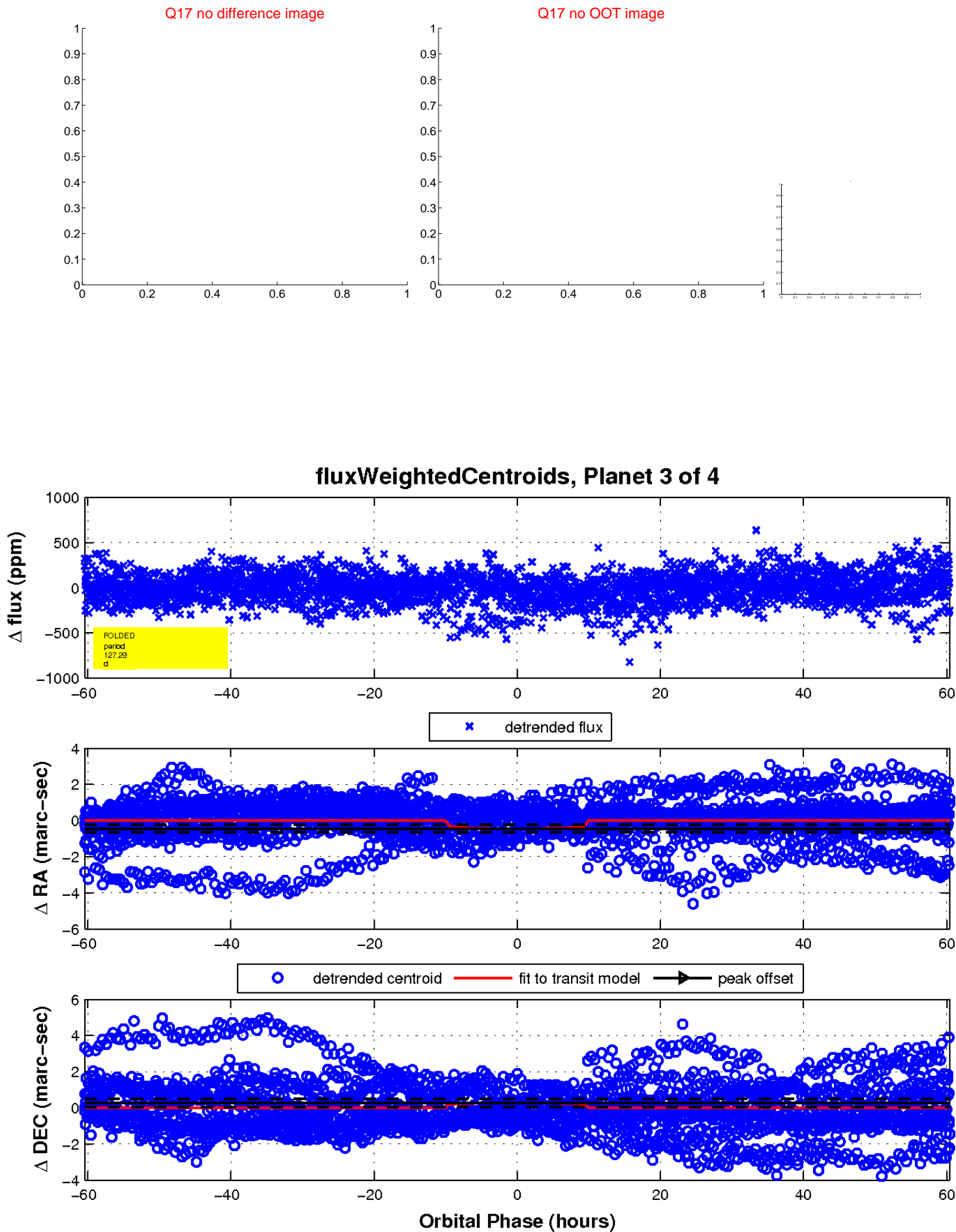
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

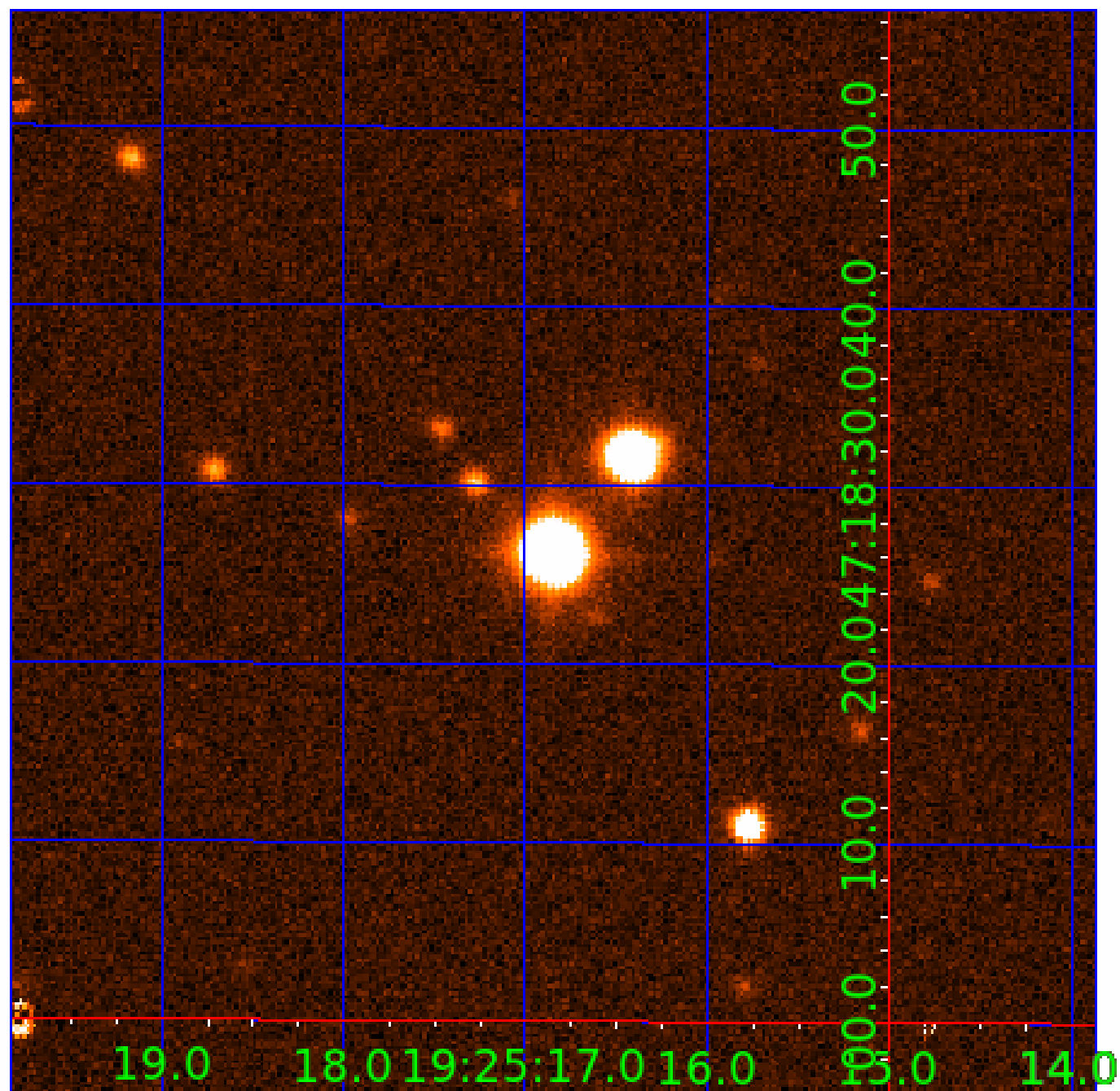


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 010272747

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})
010272747-01	OBS	No	4.261915	133.381147	26.2	12.297	11.2	7.7	1.99	7313	1.18	2991.82
010272747-02	OBS	No	4.261801	135.460223	25.5	14.933	9.9	8.3	1.99	7313	1.17	2991.93
010272747-03	OBS	No	127.293919	230.783382	193.7	20.159	9.7	6.7	1.99	7313	3.02	32.28
010272747-04	OBS	No	12.785563	141.318636	167.8	27.321	8.7	12.7	1.99	7313	5.00	691.48

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010272747-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—MOD_NONUNIQ_DV—CENT_KIC_POS
010272747-02	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_KIC_POS
010272747-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
010272747-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_KIC_POS

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

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

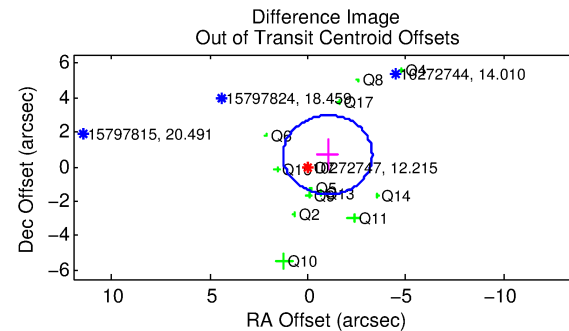
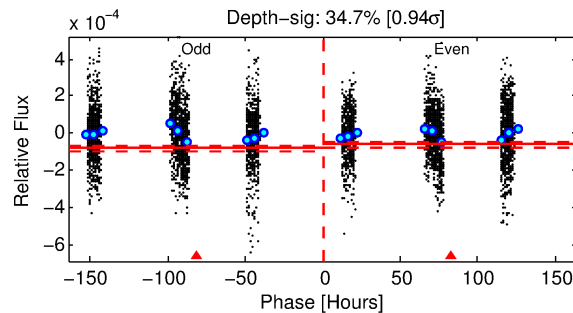
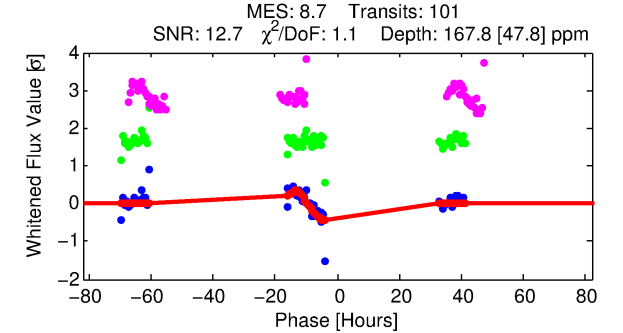
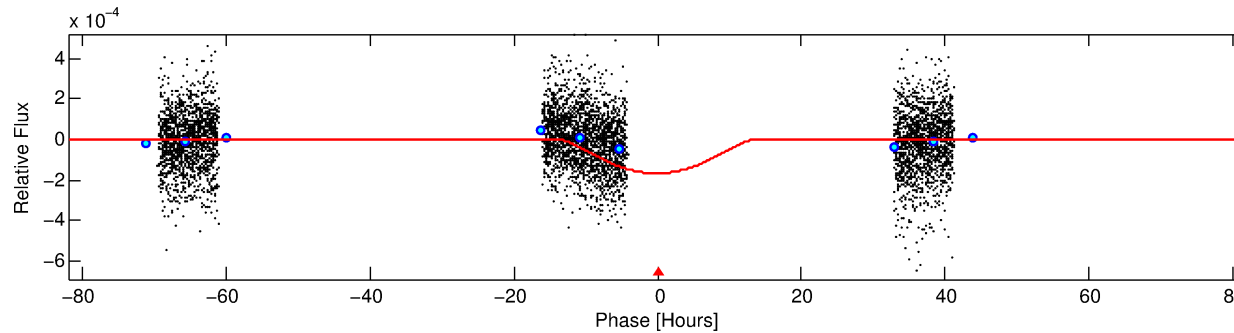
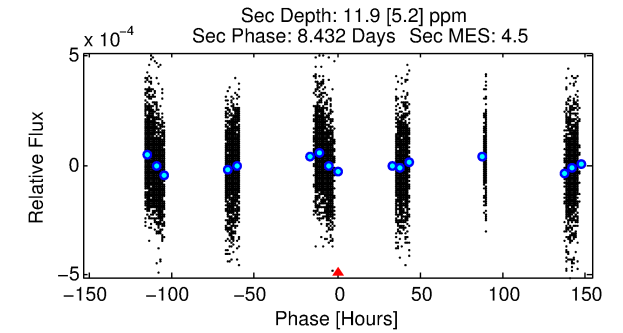
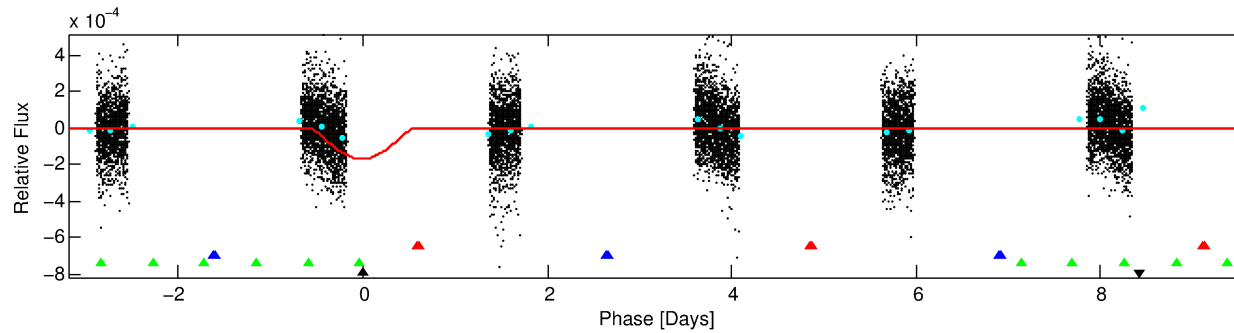
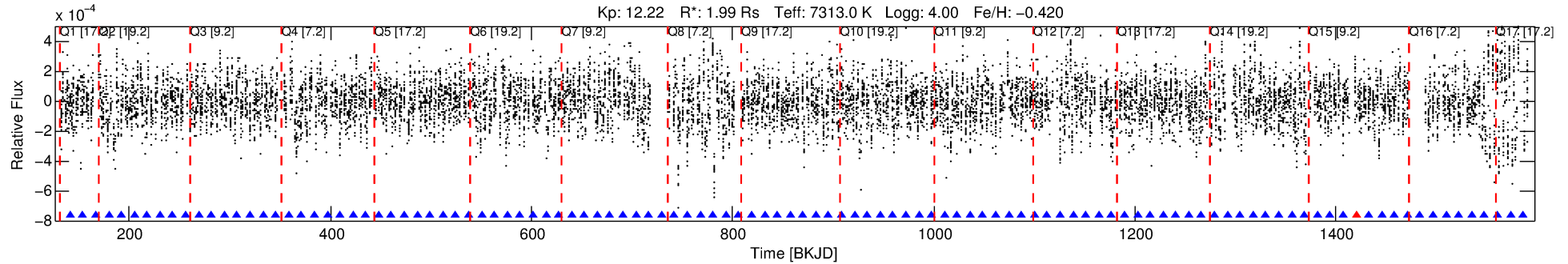
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010272747-04

No Significant Match Found

DV One-Page Summary

KIC: 10272747 Candidate: 4 of 4 Period: 12.786 d



DV Fit Results:

Period = 12.78556 [0.00037] d
Epoch = 141.3186 [0.0646] BKJD
Rp/R* = 0.0230 [0.0358]
a/R* = 1.27 [0.12]
b = 1.00 [0.06]
Seff = 691.48 [376.95]
Teq = 1308 [178] K
Rp = 5.00 [7.97] Re
a = 0.1210 [0.0399] AU
Ag = 3.83 [12.20] [0.23σ]
Teffp = 2828 [2224] K [0.68σ]

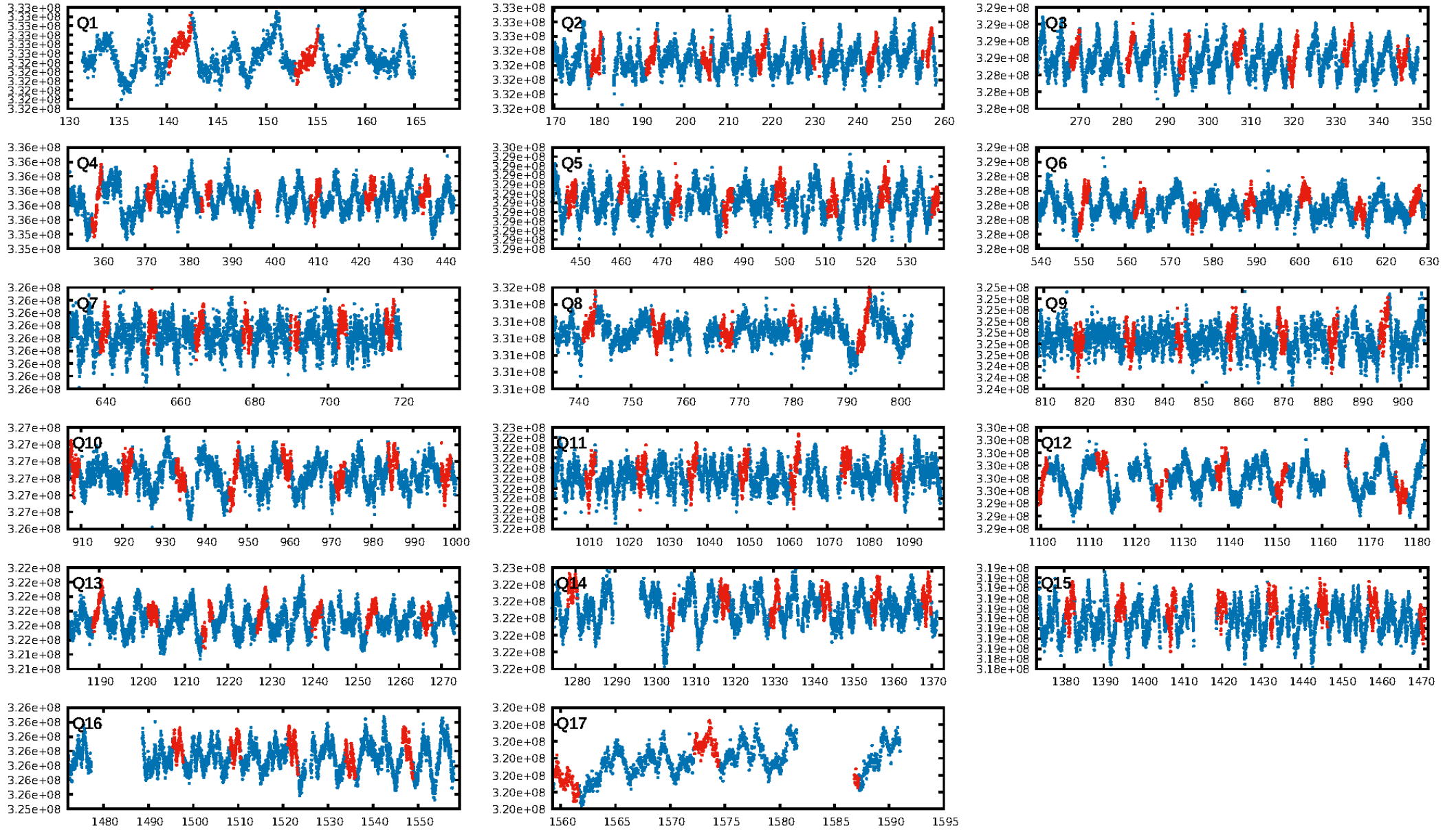
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [6.83σ]
LongPeriod-sig: 100.0% [80.94σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.93e-10
RollingBand-fgt: 0.99 [96/97]
GhostDiagnostic-chr: 0.6144
Centroid-sig: 23.1%
Centroid-so: 0.936 arcsec [1.84σ]
OotOffset-rm: 1.216 arcsec [1.60σ]
OotOffset-st: 4/2/3/4 [13]
KicOffset-rm: 1.634 arcsec [2.10σ]
KicOffset-st: 4/2/3/4 [13]
DiffImageQuality-fgm: 0.23 [3/13]
DiffImageOverlap-fno: 0.00 [0/17]

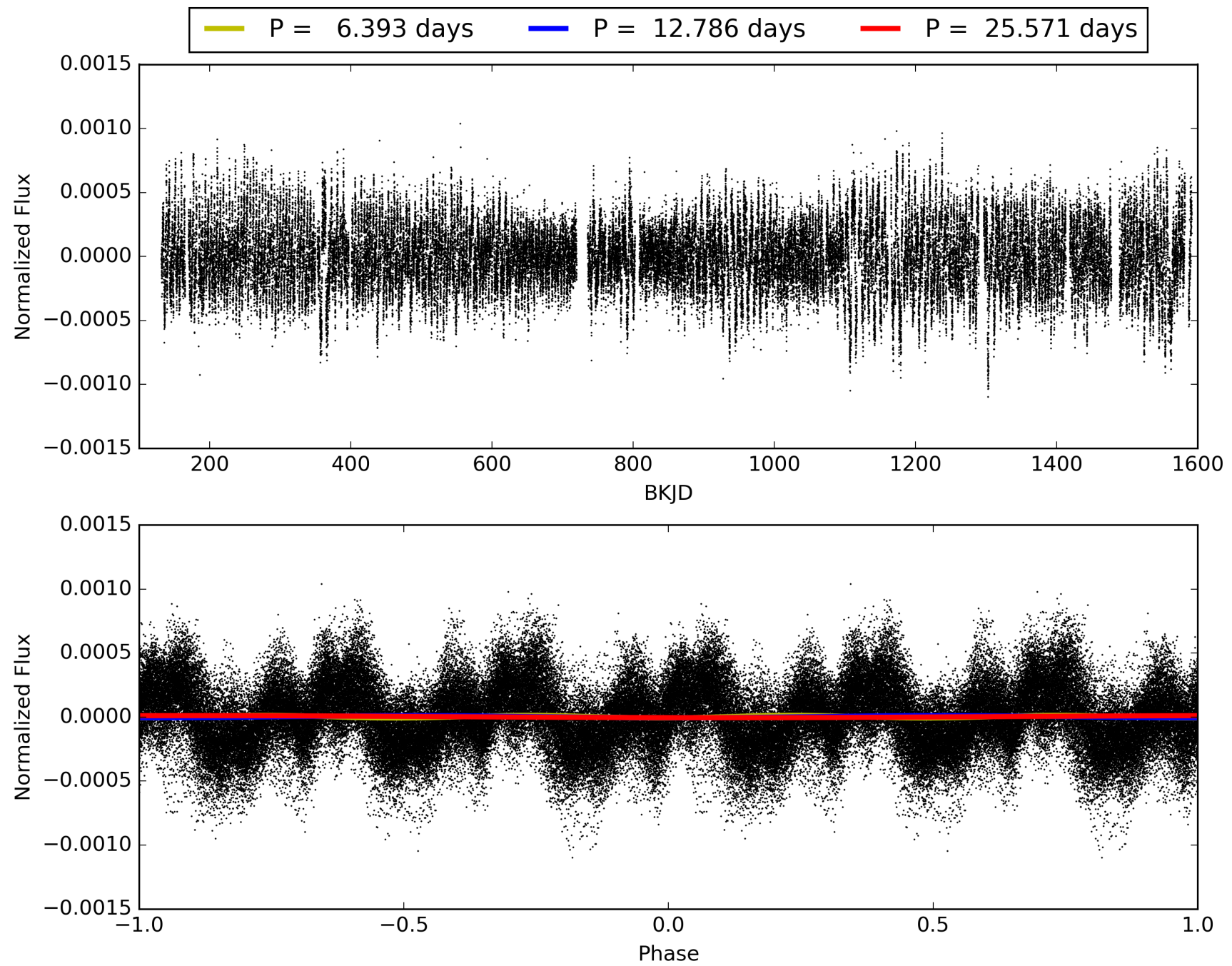
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 15:38:32 Z

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

TCE 010272747-04, PDC Light Curves

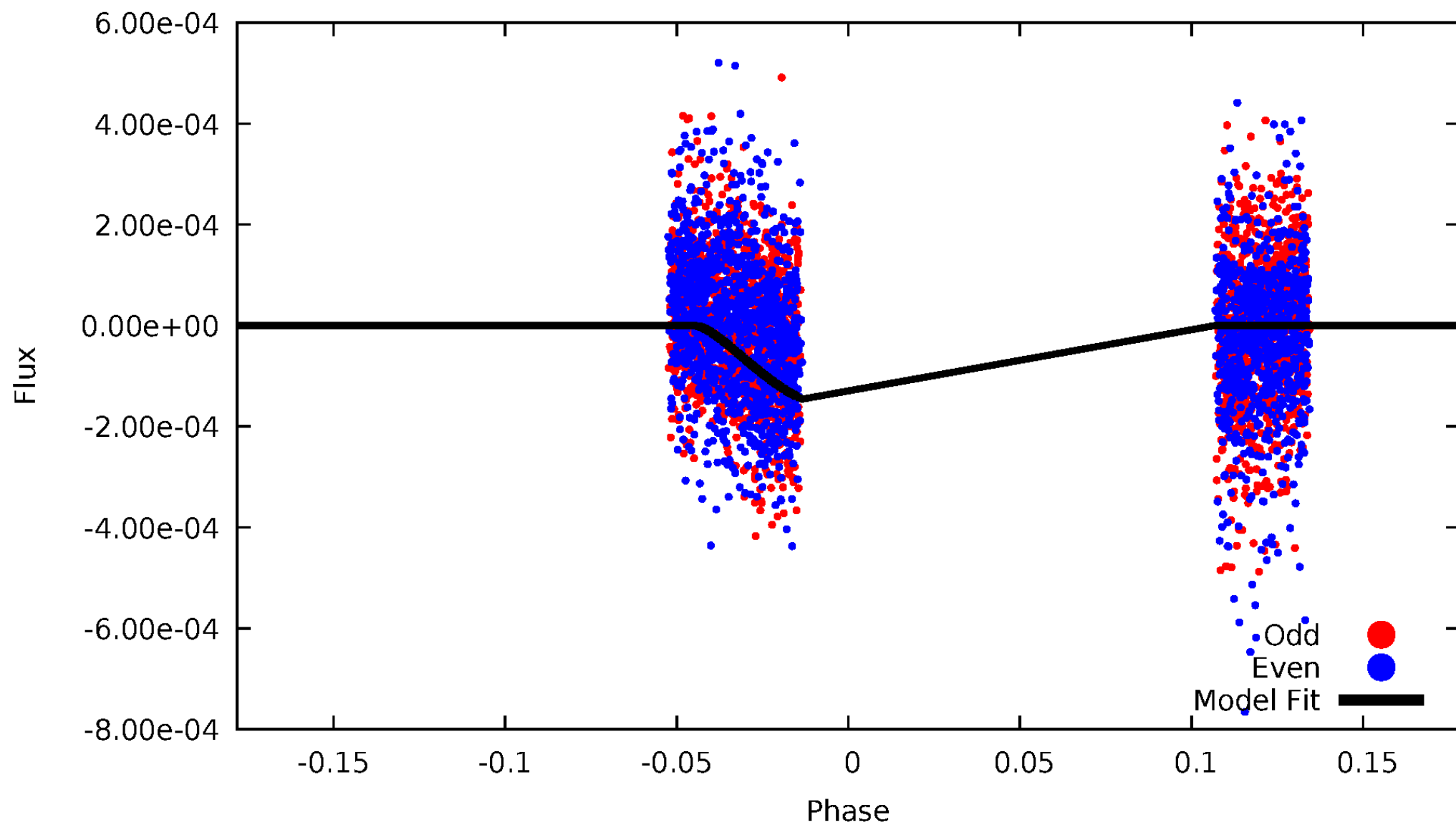


TCE 010272747-04



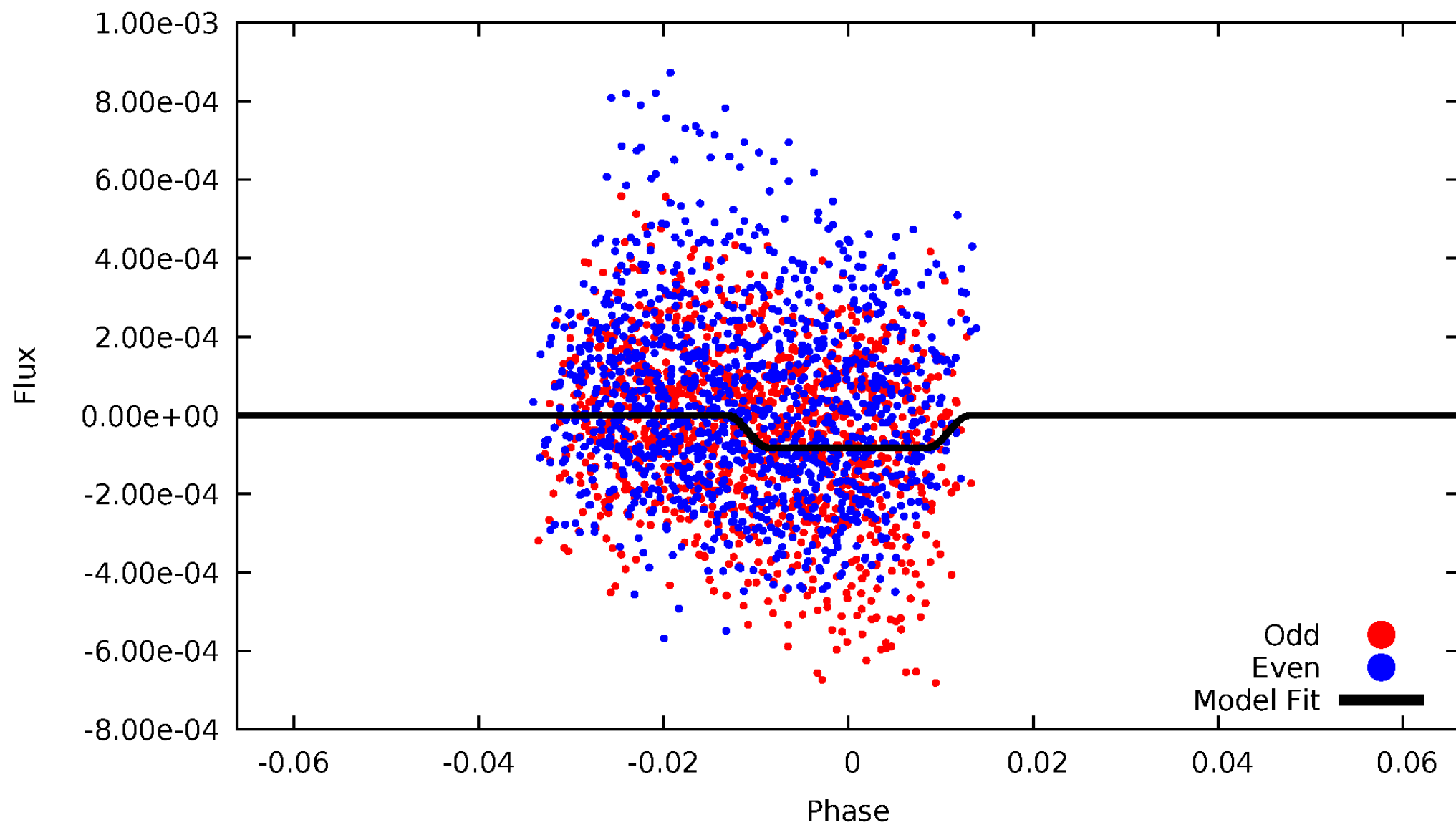
DV Odd/Even

TCE 010272747-04



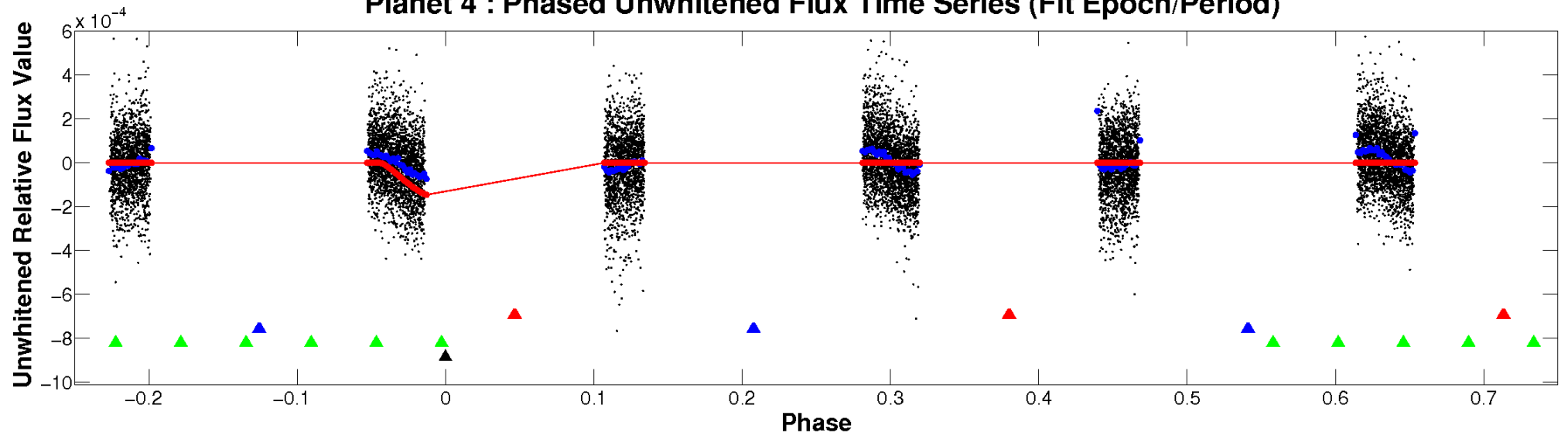
ALT Odd/Even

TCE 010272747-04

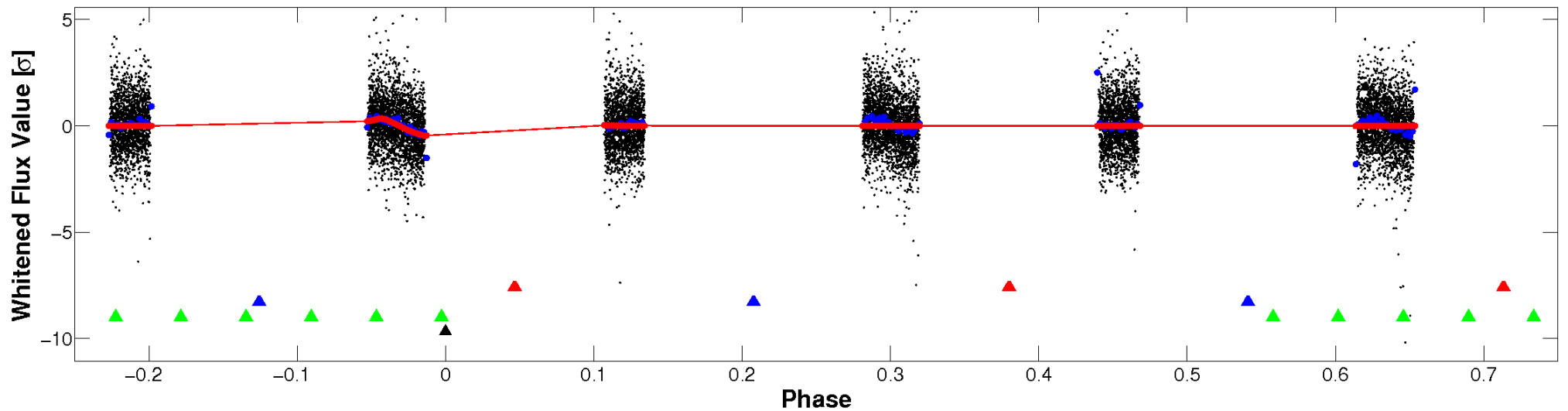


Non-Whitened Vs. Whitened Light Curve

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

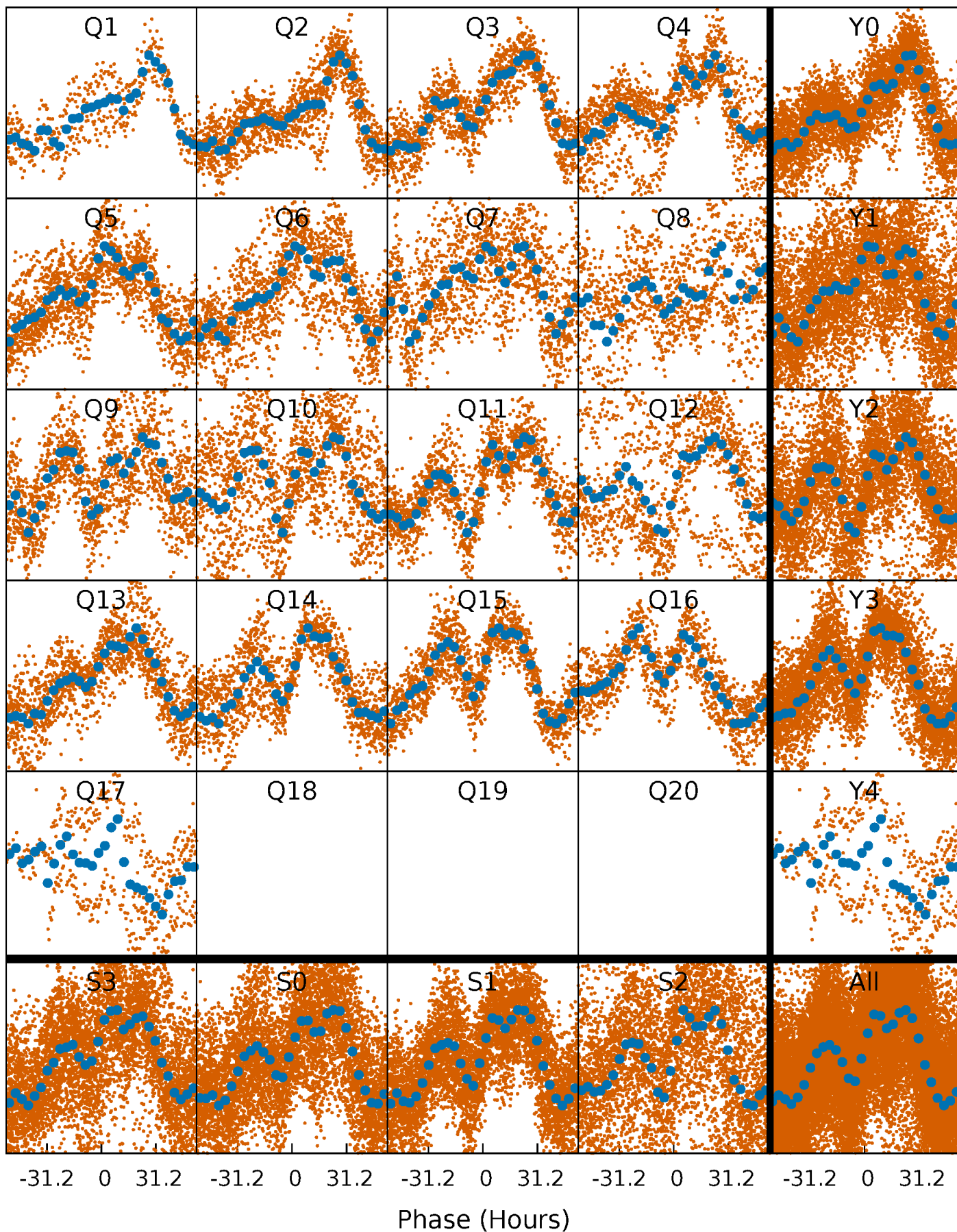


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



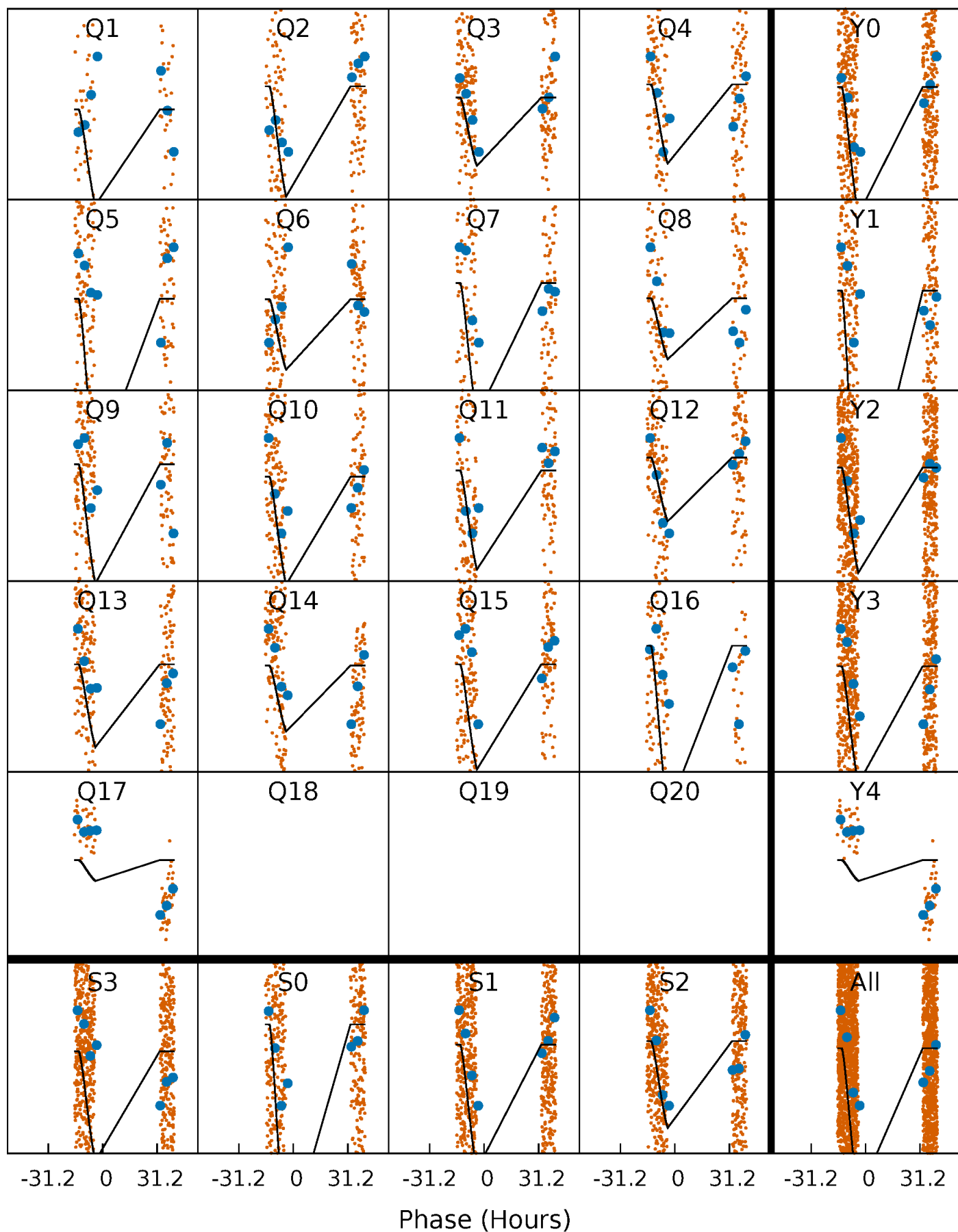
PDC Quarter-Phased Transit Curves

TCE 010272747-04 P= 12.785563 Days $T_0=141.318636$ (BKJD)



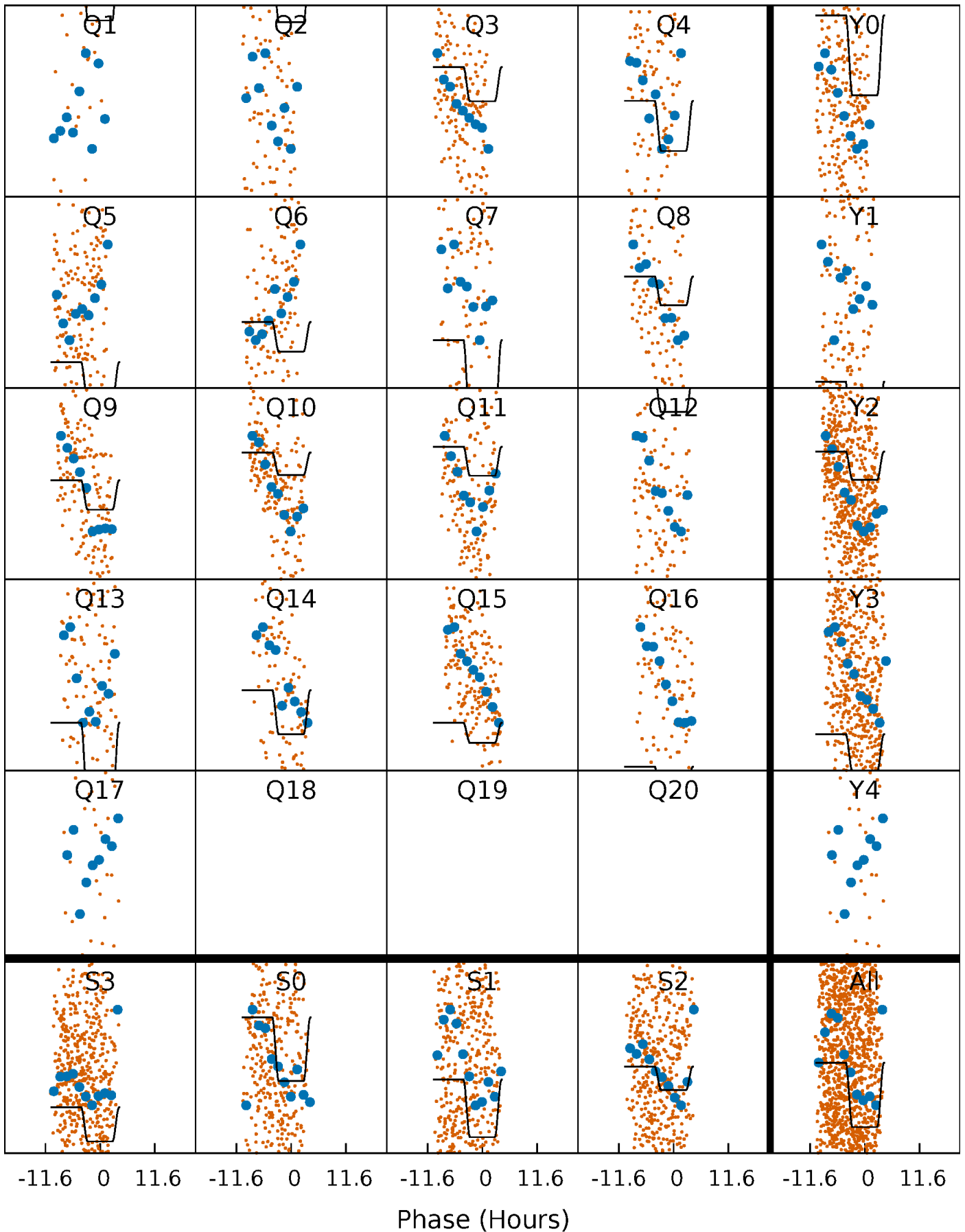
DV Quarter-Phased Transit Curves

TCE 010272747-04 P= 12.785563 Days $T_0=141.318636$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

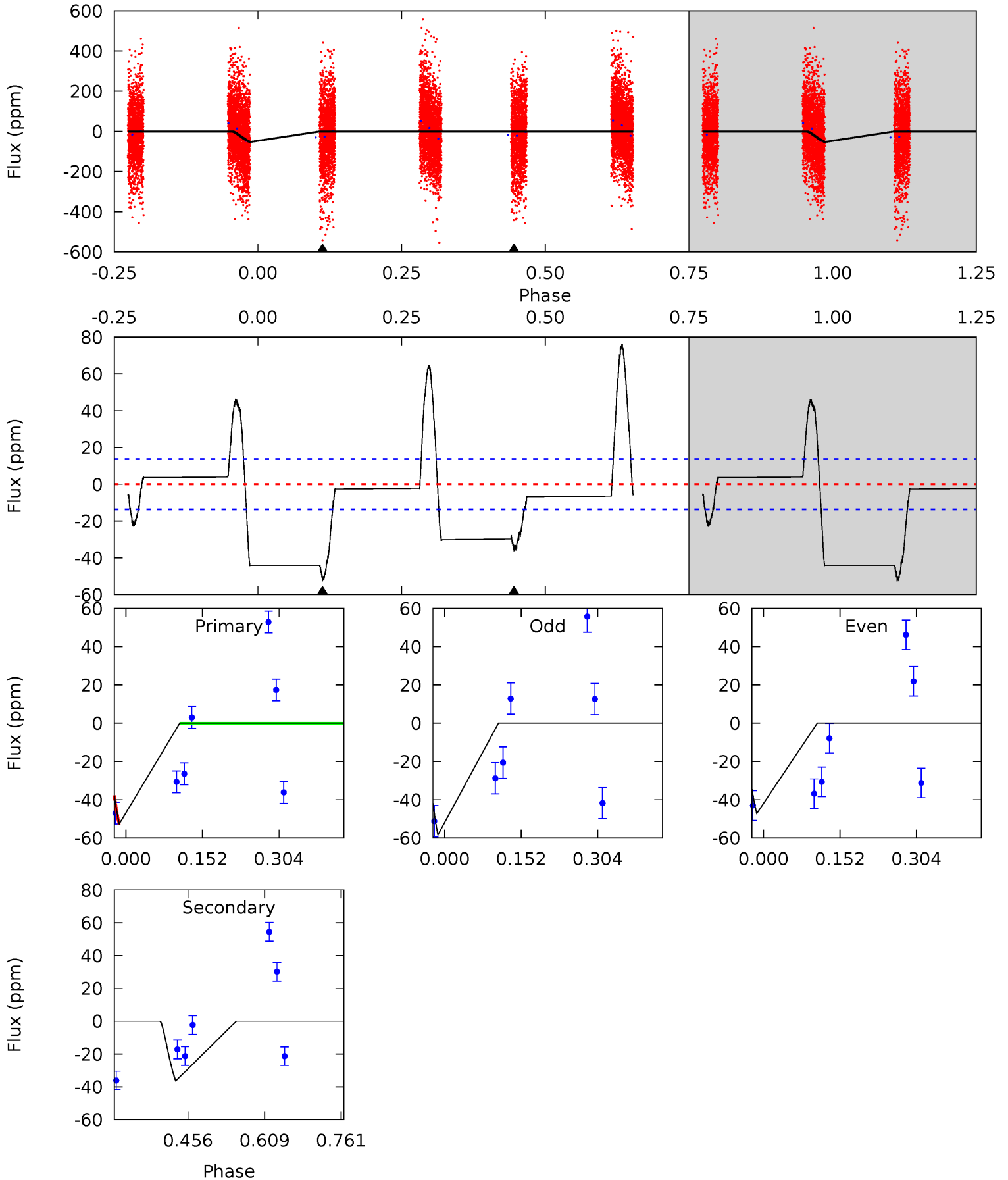
TCE 010272747-04 $P = 12.784350$ Days $T_0 = 141.102599$ (BKJD)



DV Model-Shift Uniqueness Test

010272747-04, P = 12.785563 Days, E = 128.533073 Days

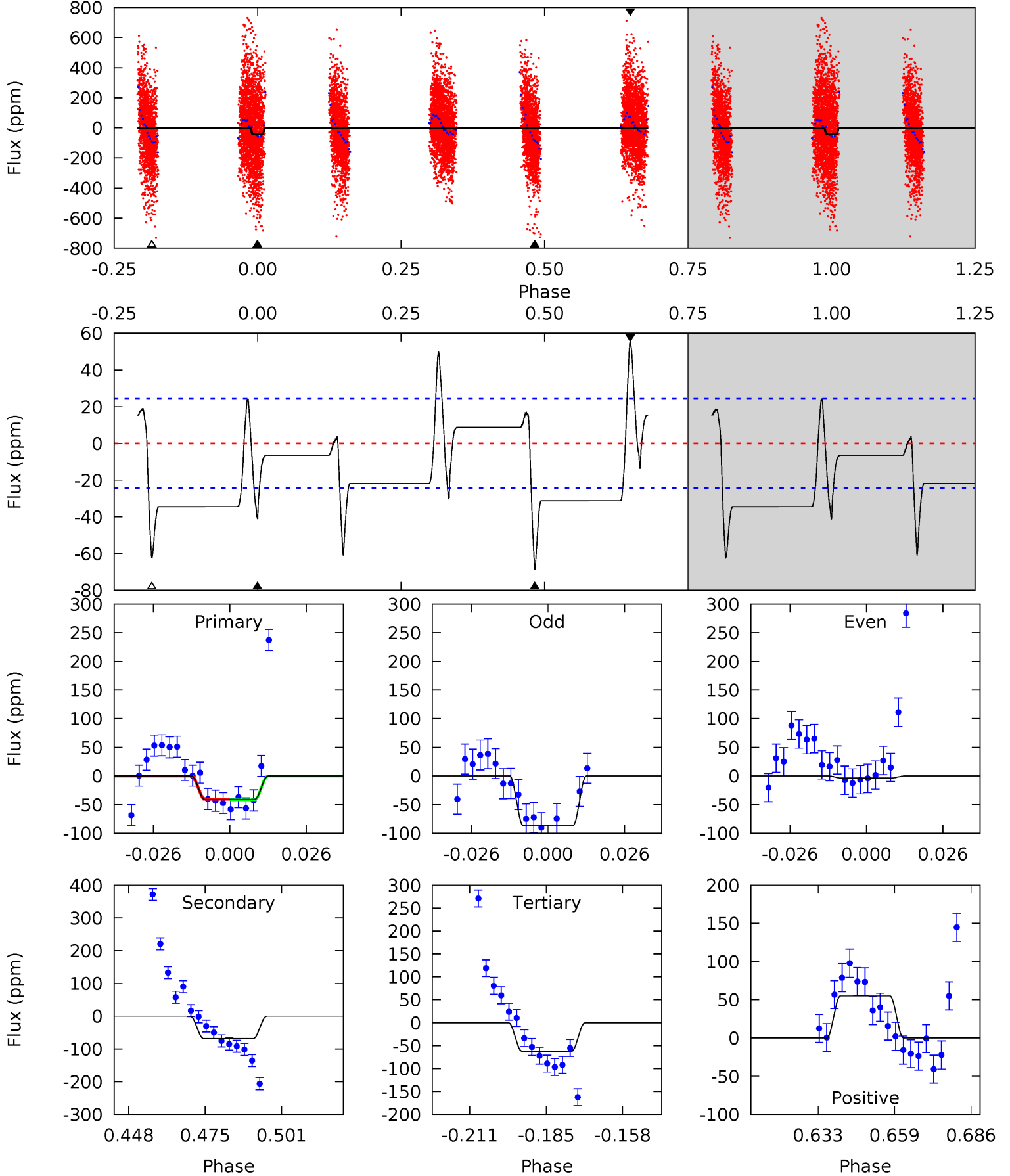
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.2	11.9	0	0	4.48	1.43	8.43	17.2	17.2	11.9	11.9	1.89	0	0.59	0



Alt Model-Shift Uniqueness Test

010272747-04, P = 12.784350 Days, E = 128.318249 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.17	13.6	12.4	10.9	4.84	2.22	5.95	-4.23	-2.76	1.24	2.71	8.28	1.30	0.44	0.09



Stellar Parameters For KIC 010272747

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	7313^{+205}_{-307}	$4.001^{+0.301}_{-0.150}$	$-0.420^{+0.250}_{-0.300}$	$1.987^{+0.468}_{-0.702}$	$1.444^{+0.193}_{-0.289}$	$0.259^{+0.536}_{-0.109}$
	+3%/-4%	+8%/-4%	+60%/-71%	+24%/-35%	+13%/-20%	+207%/-42%
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 010272747-04 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-36 ± 3	$6.93^{+7.27}_{-4.52}$	1788^{+139}_{-175}	3448^{+1810}_{-648}	$5.703^{+42.963}_{-4.256}$
Alt.	-69 ± 5	$5.85^{+6.01}_{-3.90}$	1804^{+135}_{-183}	4126^{+2729}_{-852}	16^{+129}_{-12}

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 $A_{obs} \gg 1.0$

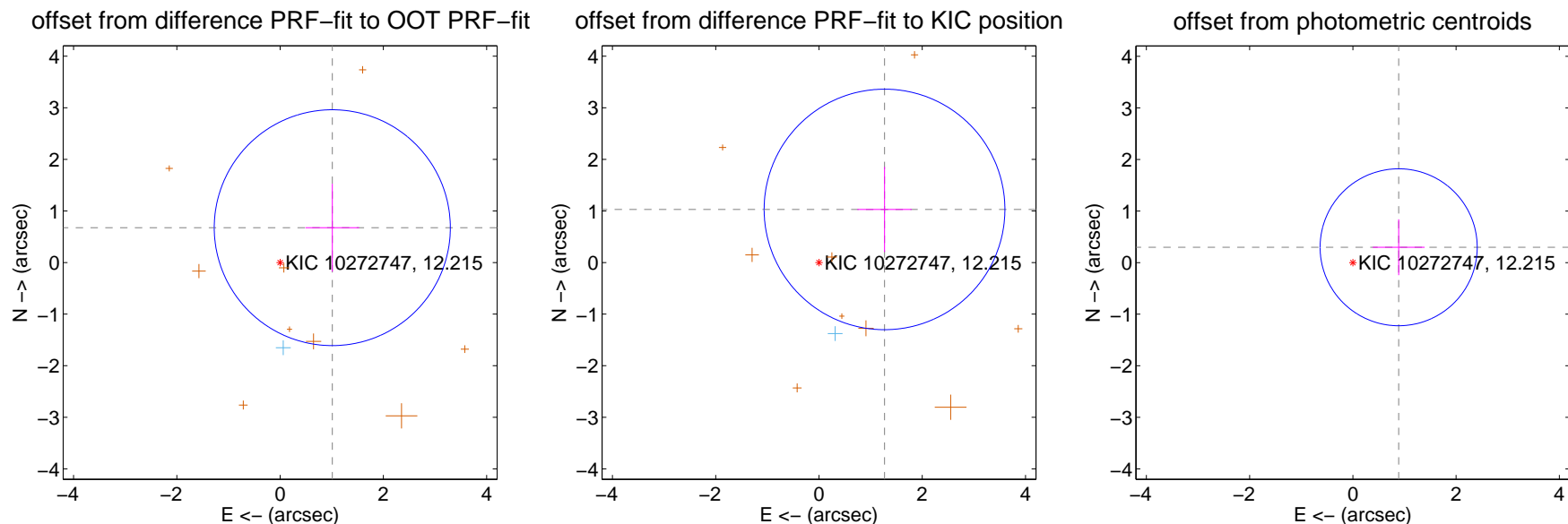
DV Centroid Data

Supplemental centroid analysis for 010272747-04. Kepler magnitude: 12.21. Transit SNR 12.69

There are 3 quarters with good PRF difference image offsets

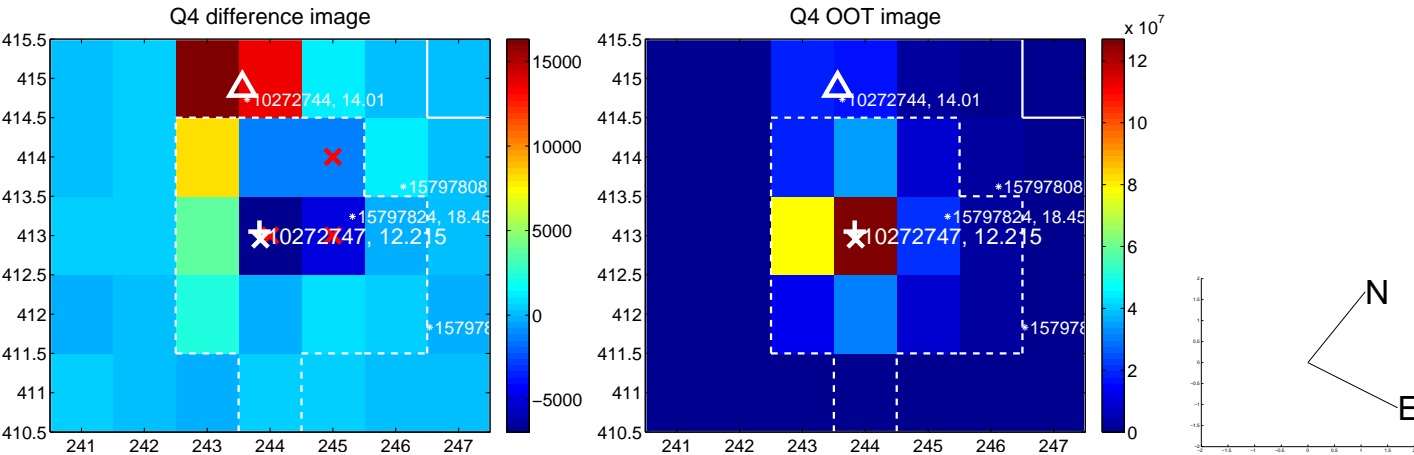
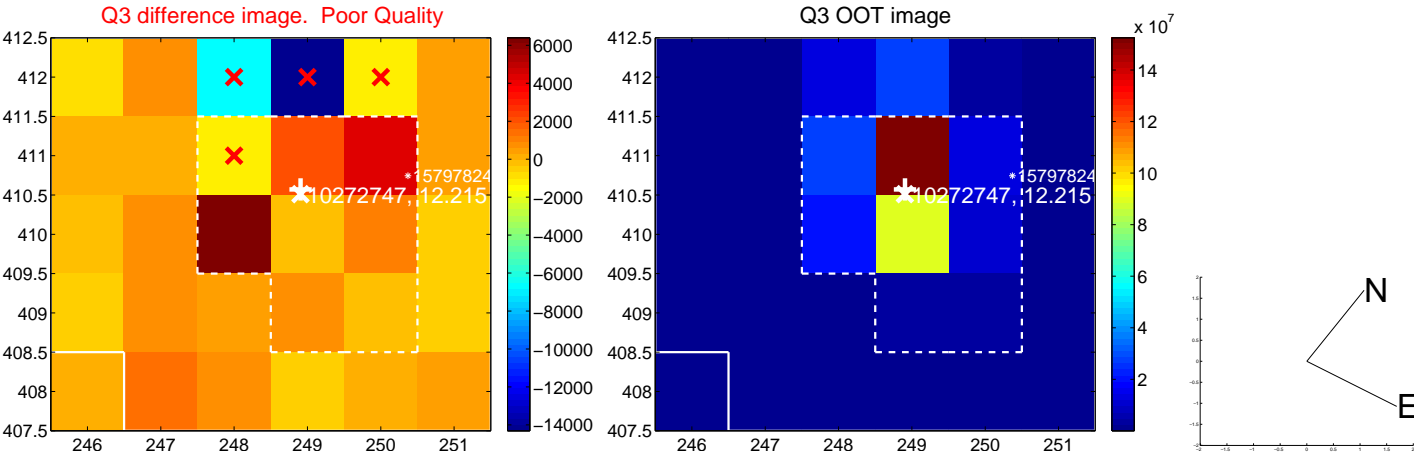
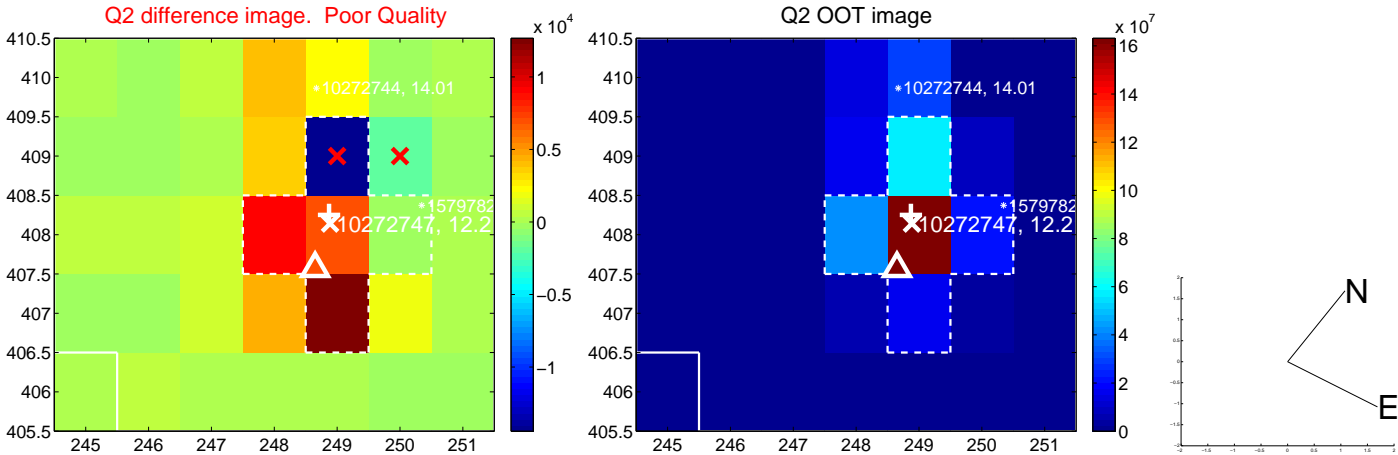
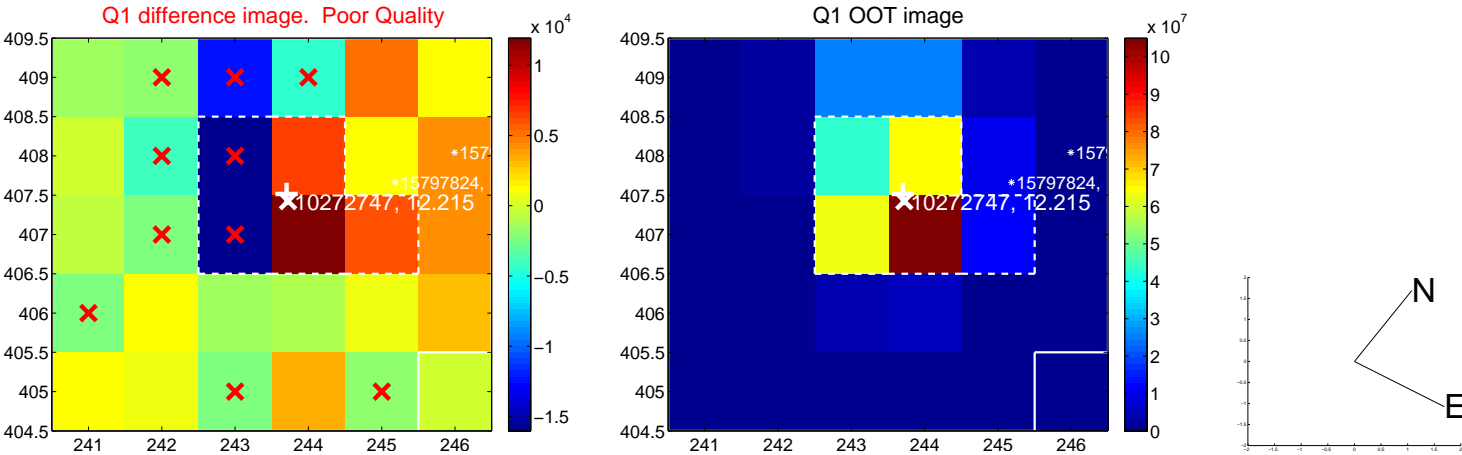
The direct PRF centroid is offset from the target star catalog position by about 0.38 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.216 ± 0.762	1.60	-1.011 ± 0.520	0.676 ± 0.852
PRF-fit source offset from KIC position	1.634 ± 0.777	2.10	-1.269 ± 0.526	1.030 ± 0.826
photometric centroid source offset	0.94 ± 0.51	1.84	-0.89 ± 0.50	0.30 ± 0.54

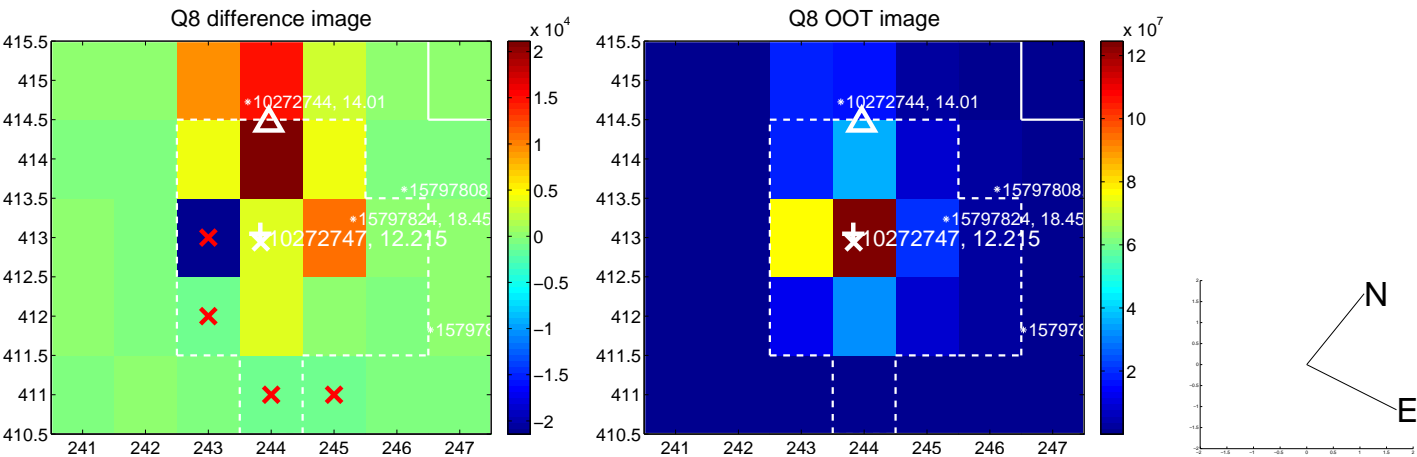
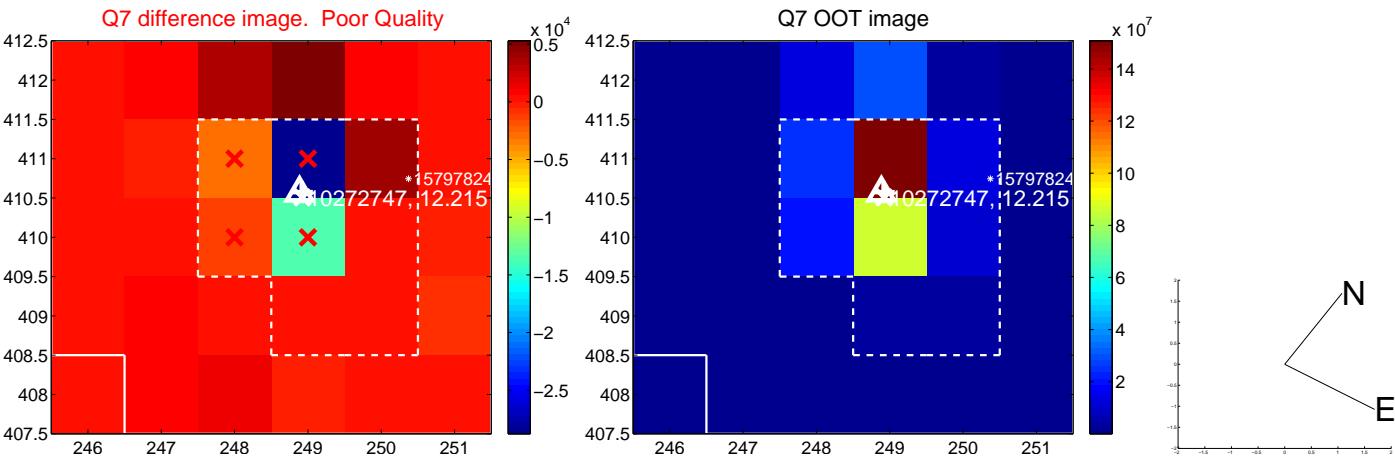
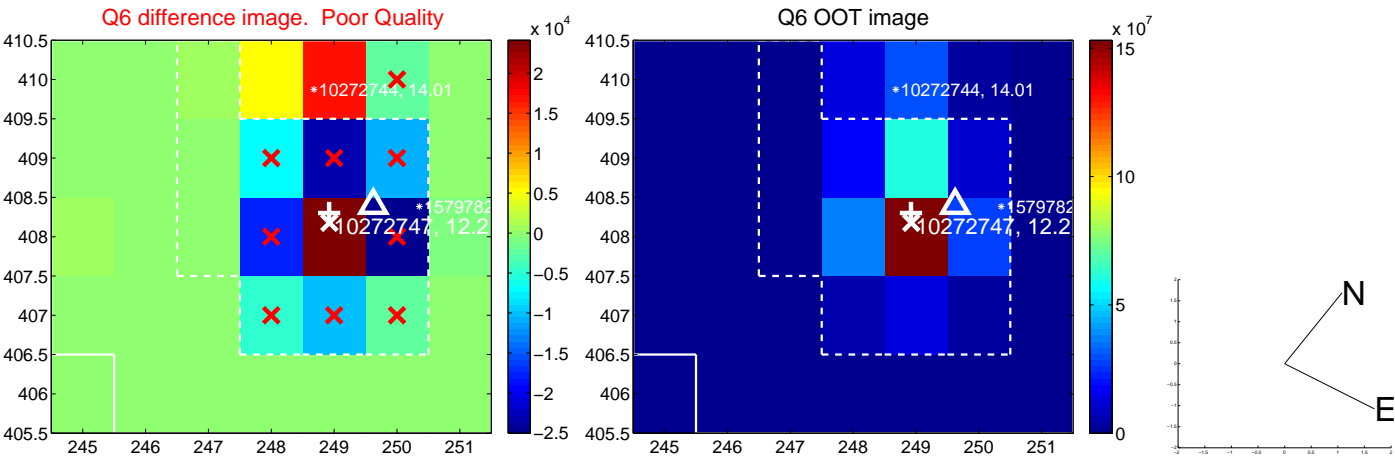
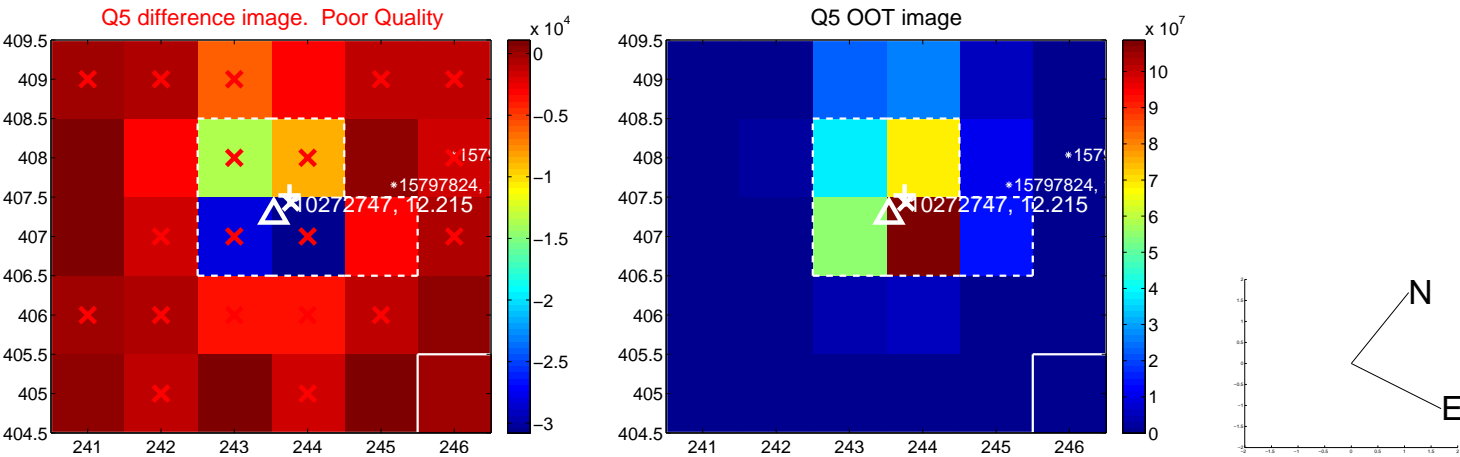


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

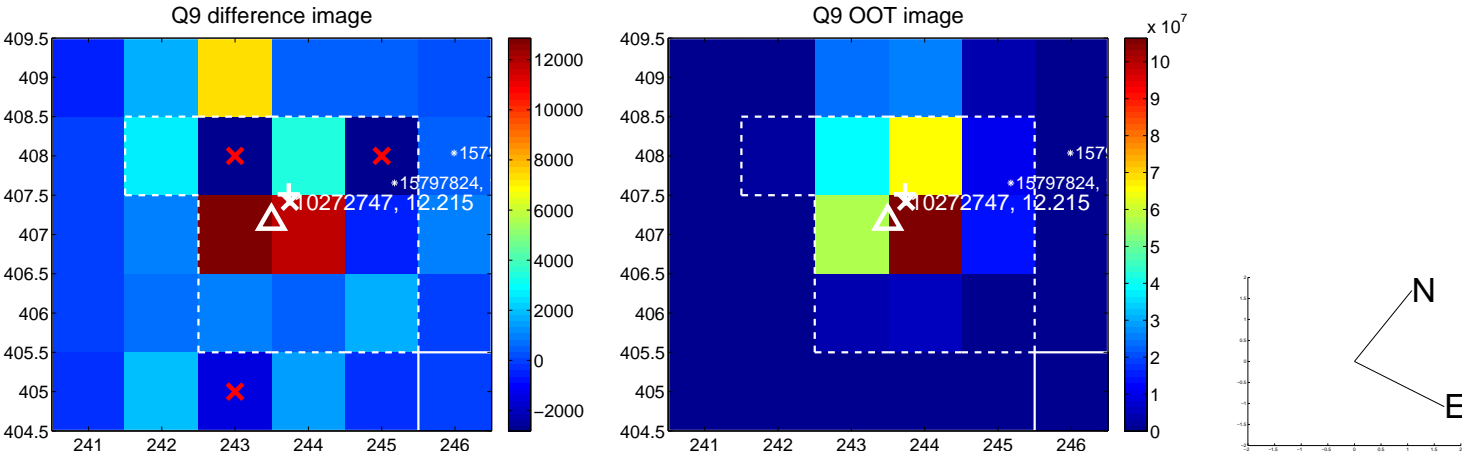
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



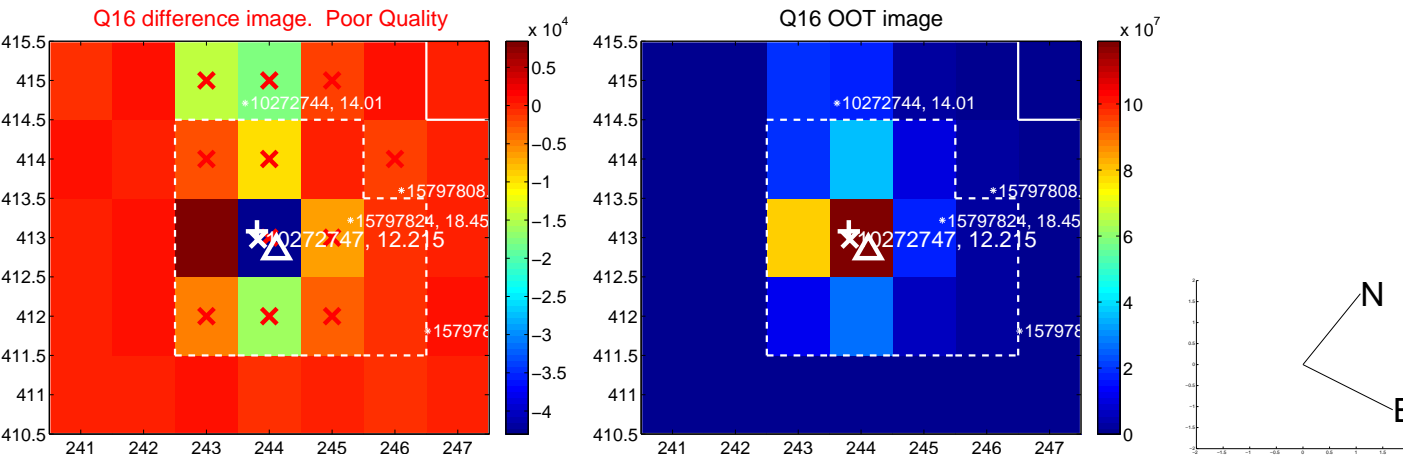
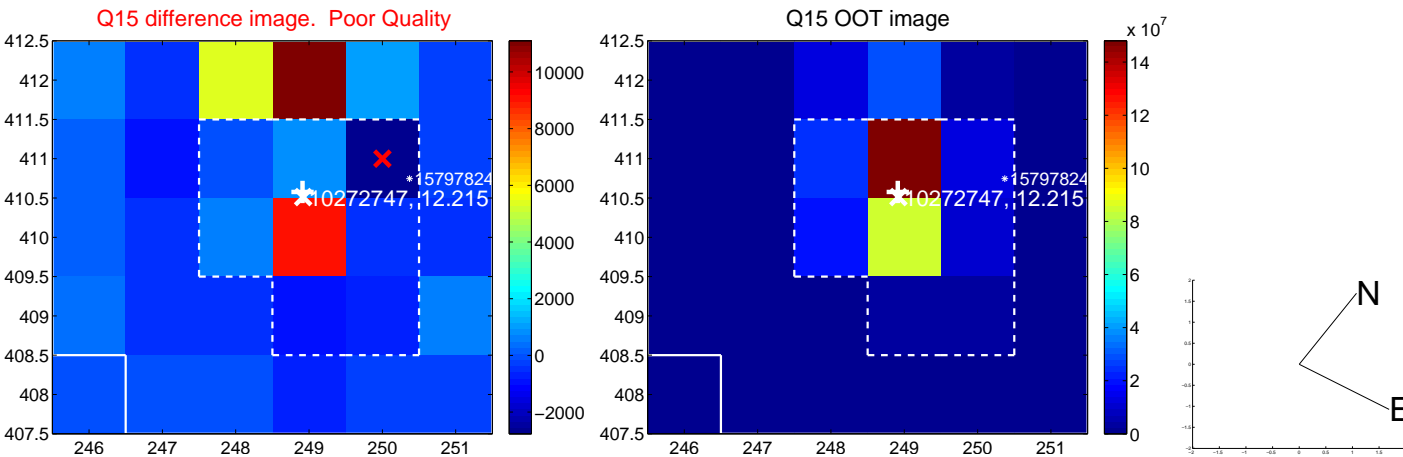
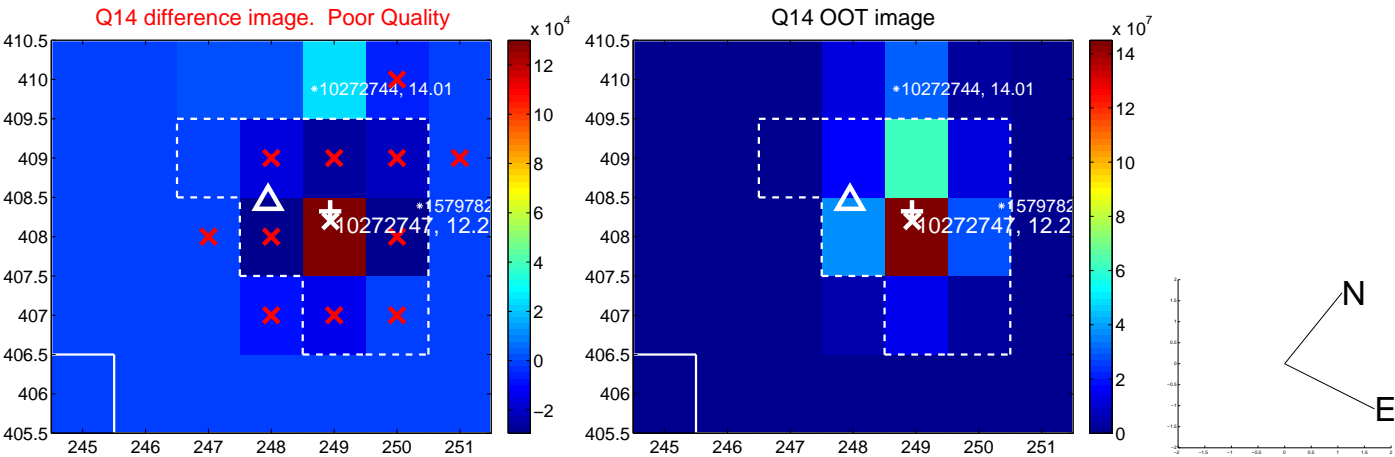
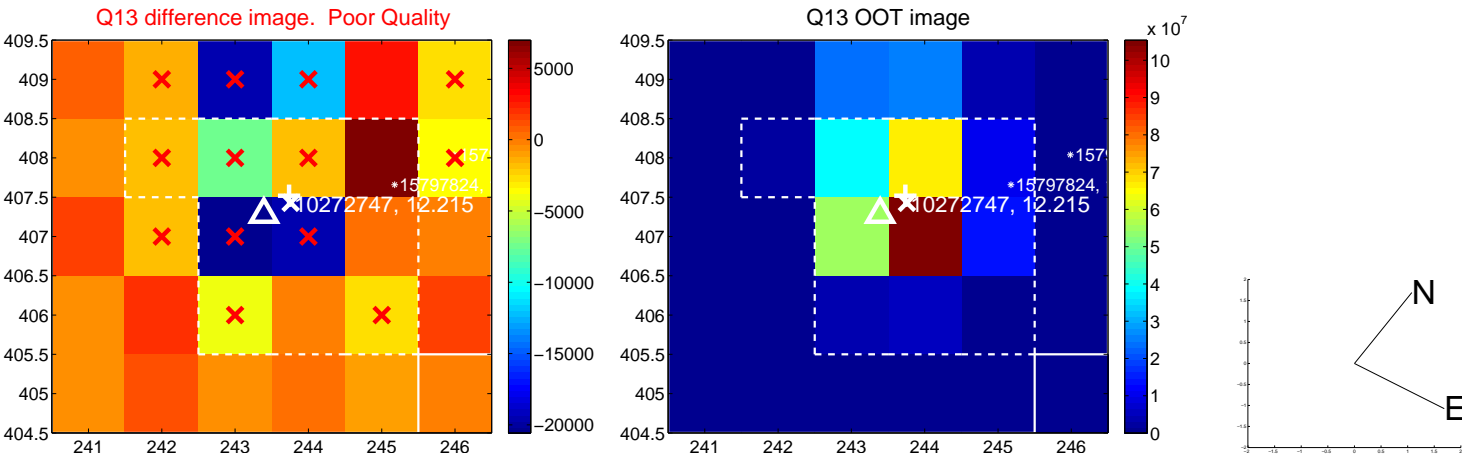
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



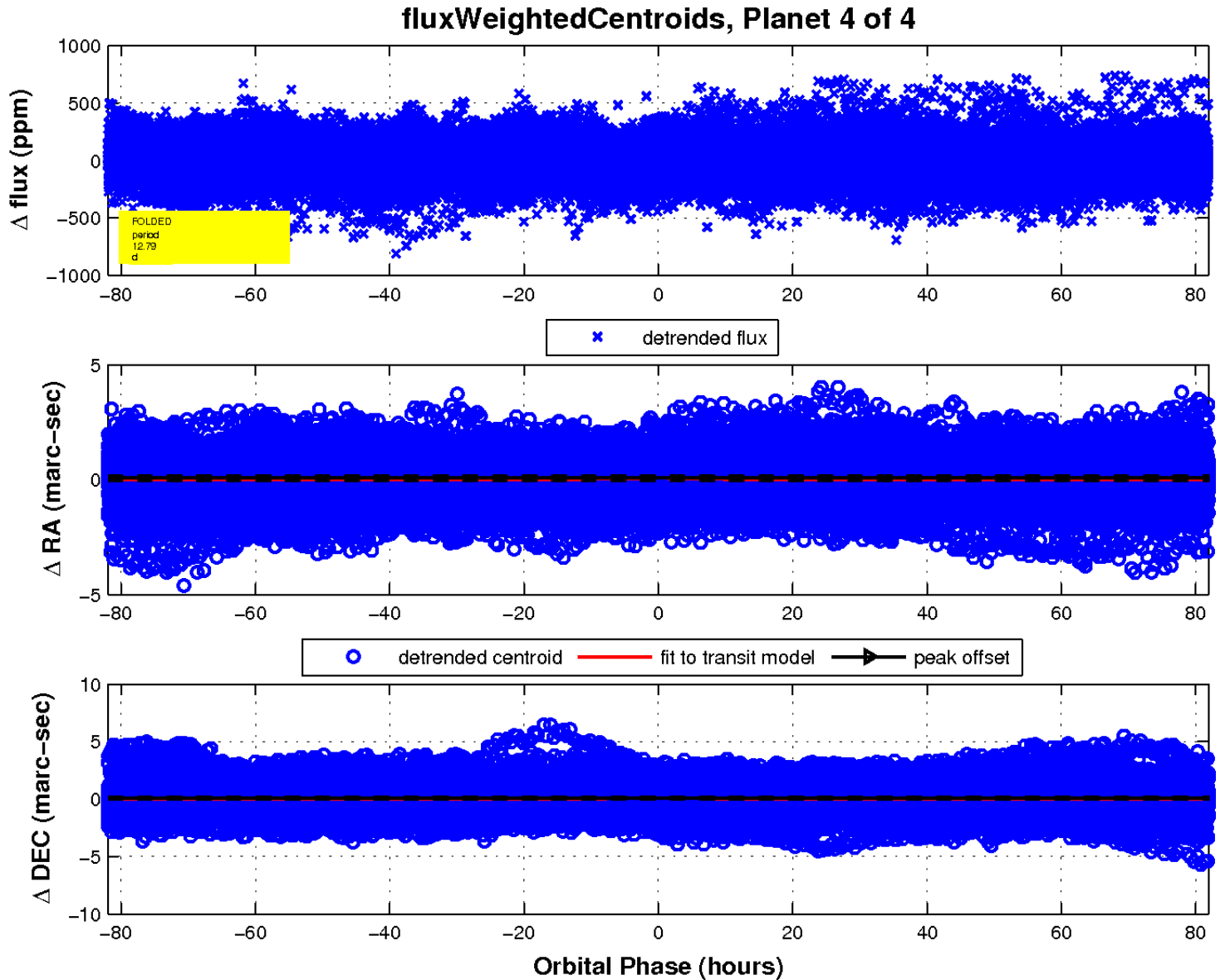
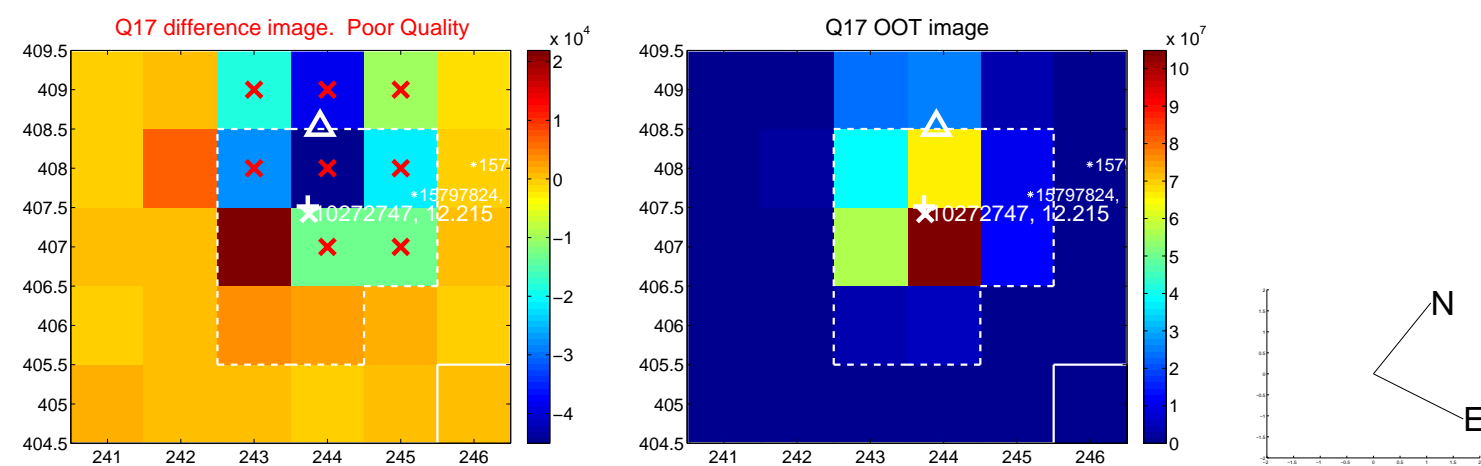
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

