

KIC 006048137

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})
006048137-01	OBS	No	2.828329	132.489678	39.5	7.830	7.8	10.1	1.56	6582	1.14	2540.09
006048137-03	OBS	No	219.421329	255.059338	200.1	11.331	13.8	5.8	1.56	6582	2.39	7.68
006048137-04	OBS	No	2.829162	134.270096	36.5	24.242	8.4	8.4	1.56	6582	1.13	2539.10

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006048137-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_KIC_POS
006048137-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006048137-04	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_ZUMA—SWEET_NTL—LPP_DV—LPP_ALT—SAME_NTL_PERIOD—CENT_KIC_POS—HALO_GHOST

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

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

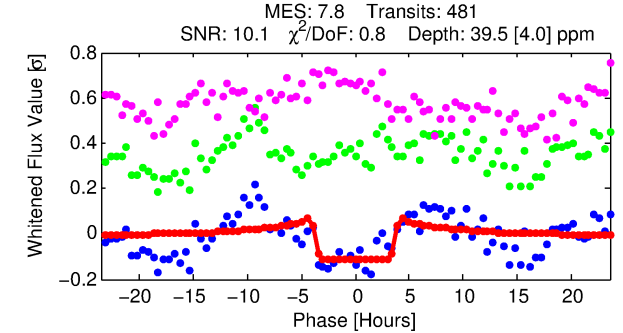
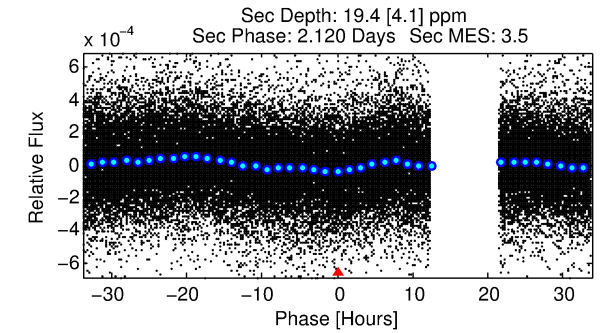
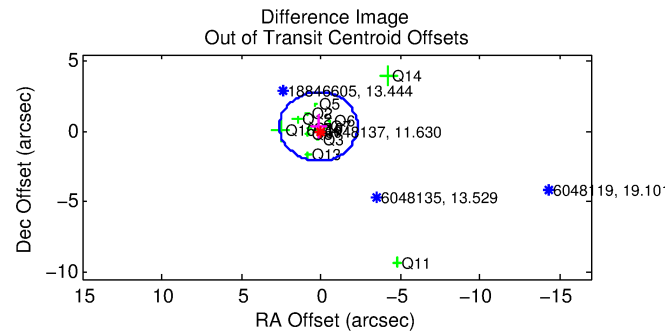
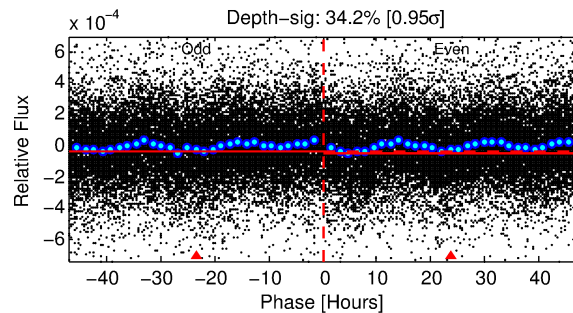
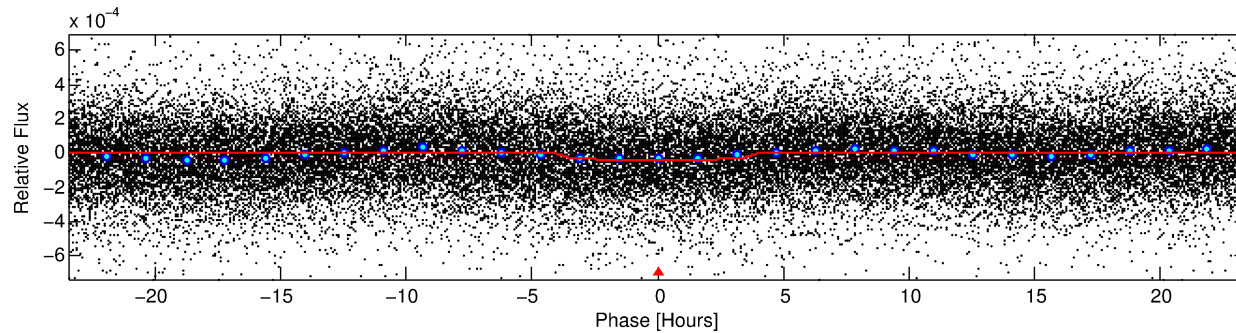
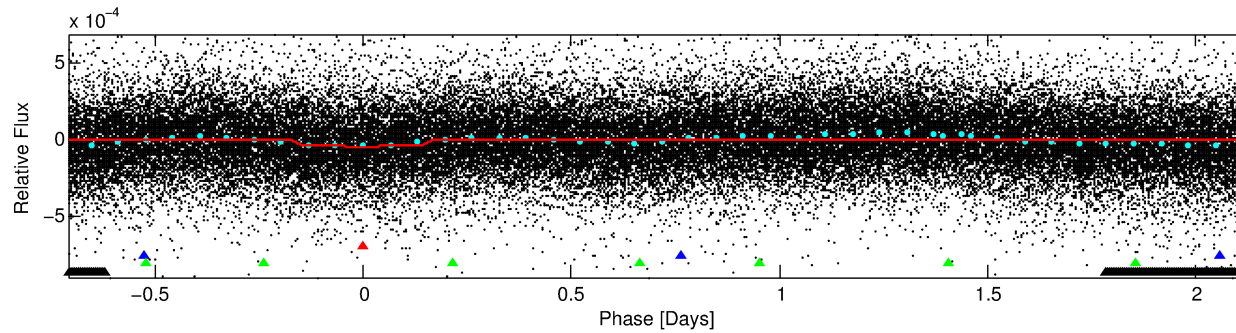
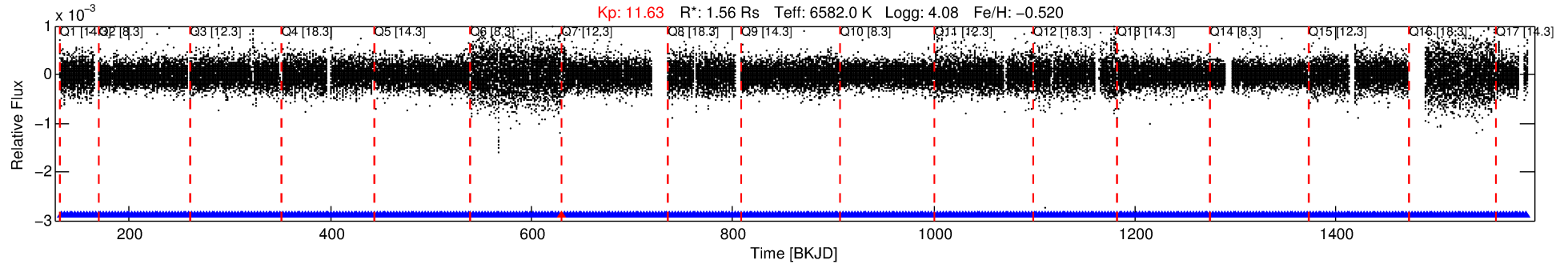
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006048137-01

No Significant Match Found

DV One-Page Summary

KIC: 6048137 Candidate: 1 of 4 Period: 2.828 d



DV Fit Results:

Period = 2.82833 [0.00002] d
Epoch = 132.4897 [0.0049] BKJD
Rp/R* = 0.0067 [0.0012]
a/R* = 1.55 [0.91]
b = 0.90 [0.21]
Seff = 2540.10 [1324.55]
Teq = 1810 [236] K
Rp = 1.14 [0.43] Re
a = 0.0401 [0.0126] AU
Ag = 13.11 [8.52] [1.42 σ]
Teffp = 5325 [584] K [5.58 σ]

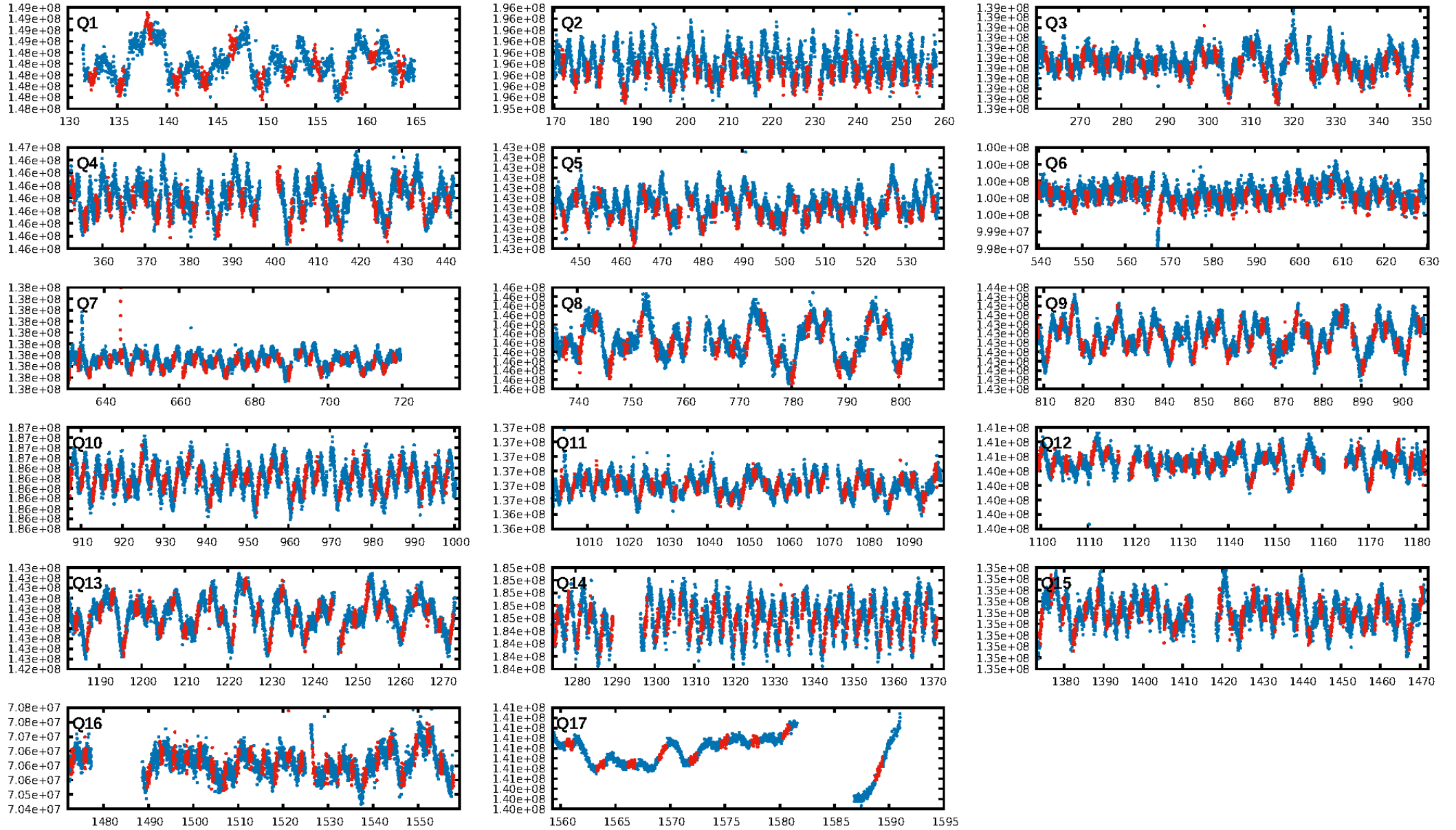
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.1% [0.00 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [459/460]
GhostDiagnostic-chr: 1.25
Centroid-sig: 0.0%
Centroid-so: 4.466 arcsec [4.68 σ]
OotOffset-rm: 0.386 arcsec [0.47 σ]
KicOffset-rm: 4.033 arcsec [5.92 σ]
OotOffset-st: 4/3/4/3 [14]
KicOffset-st: 4/3/4/3 [14]
DiffImageQuality-fgm: 0.71 [10/14]
DiffImageOverlap-fno: 0.00 [0/17]

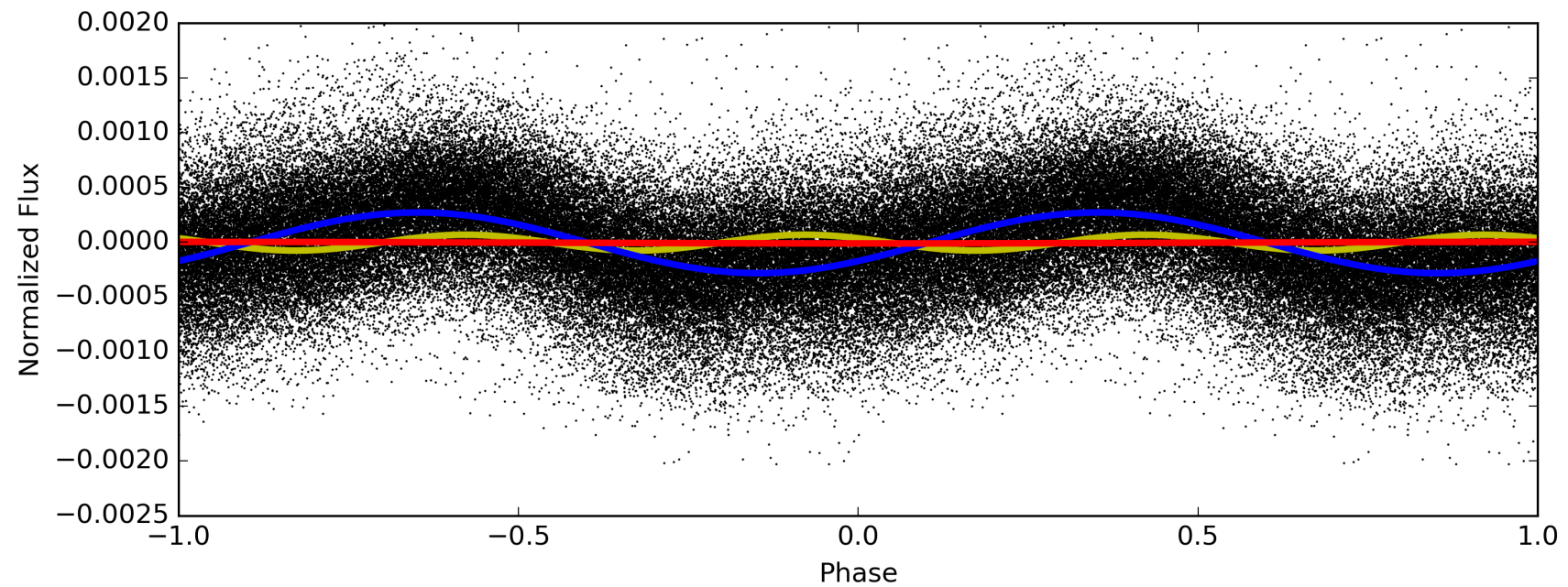
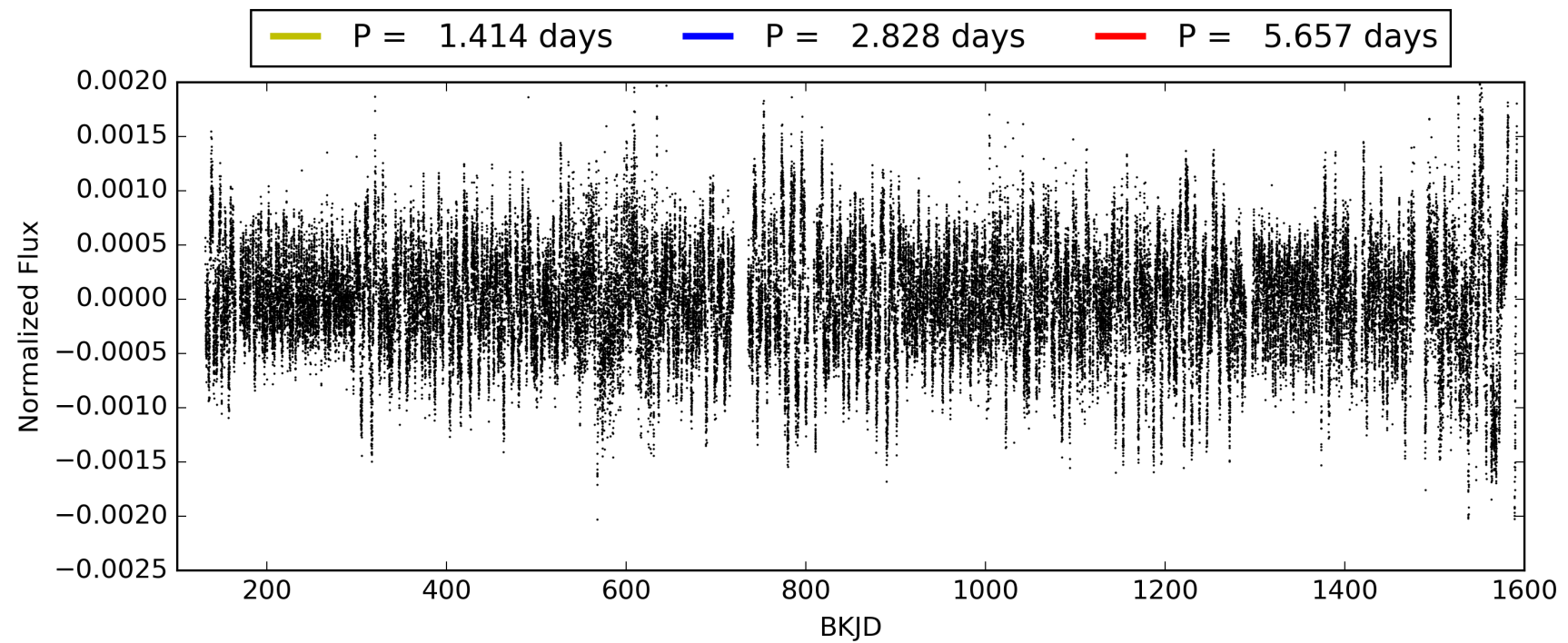
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 04:05:35 Z

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

TCE 006048137-01, PDC Light Curves

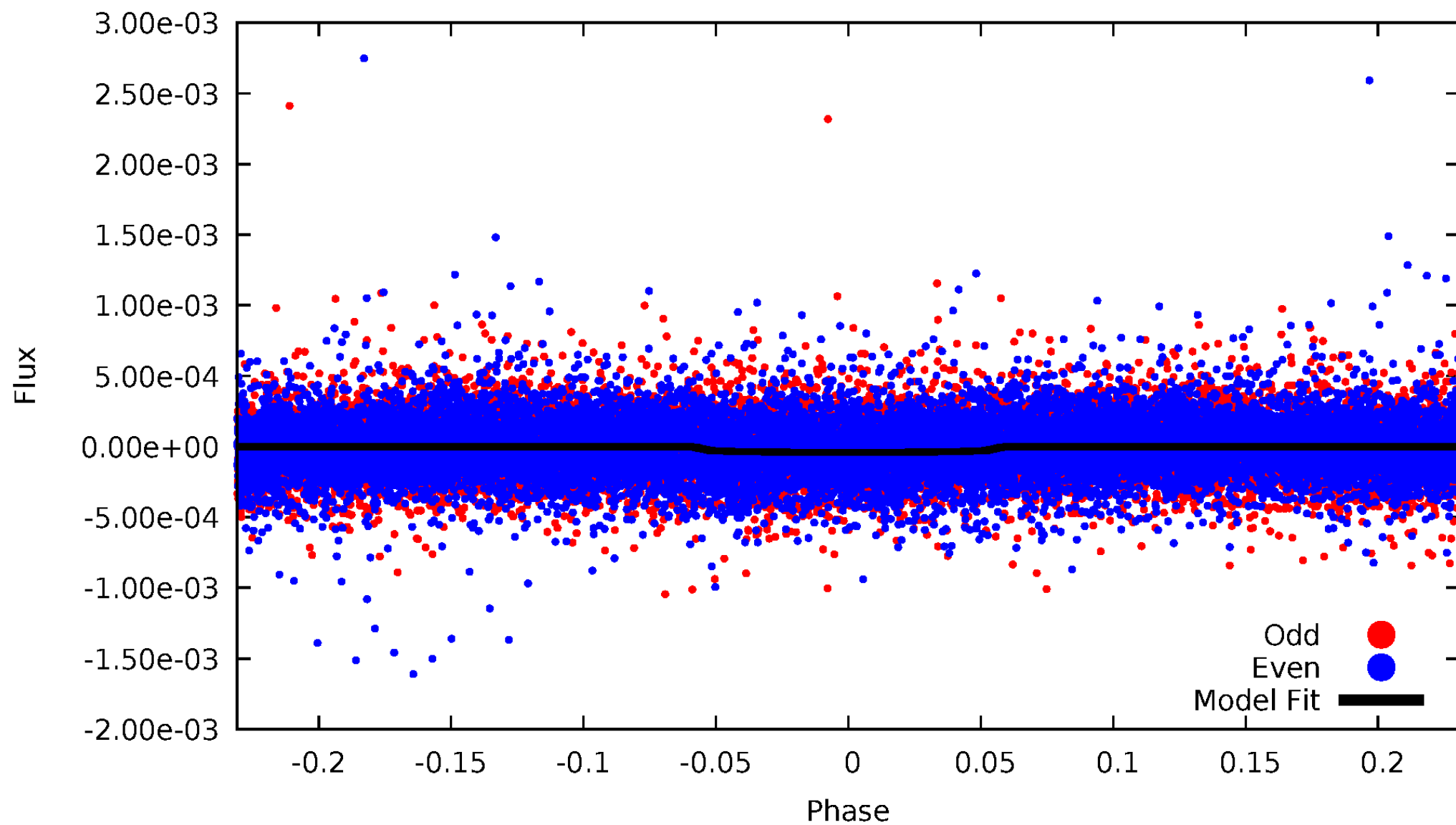


TCE 006048137-01



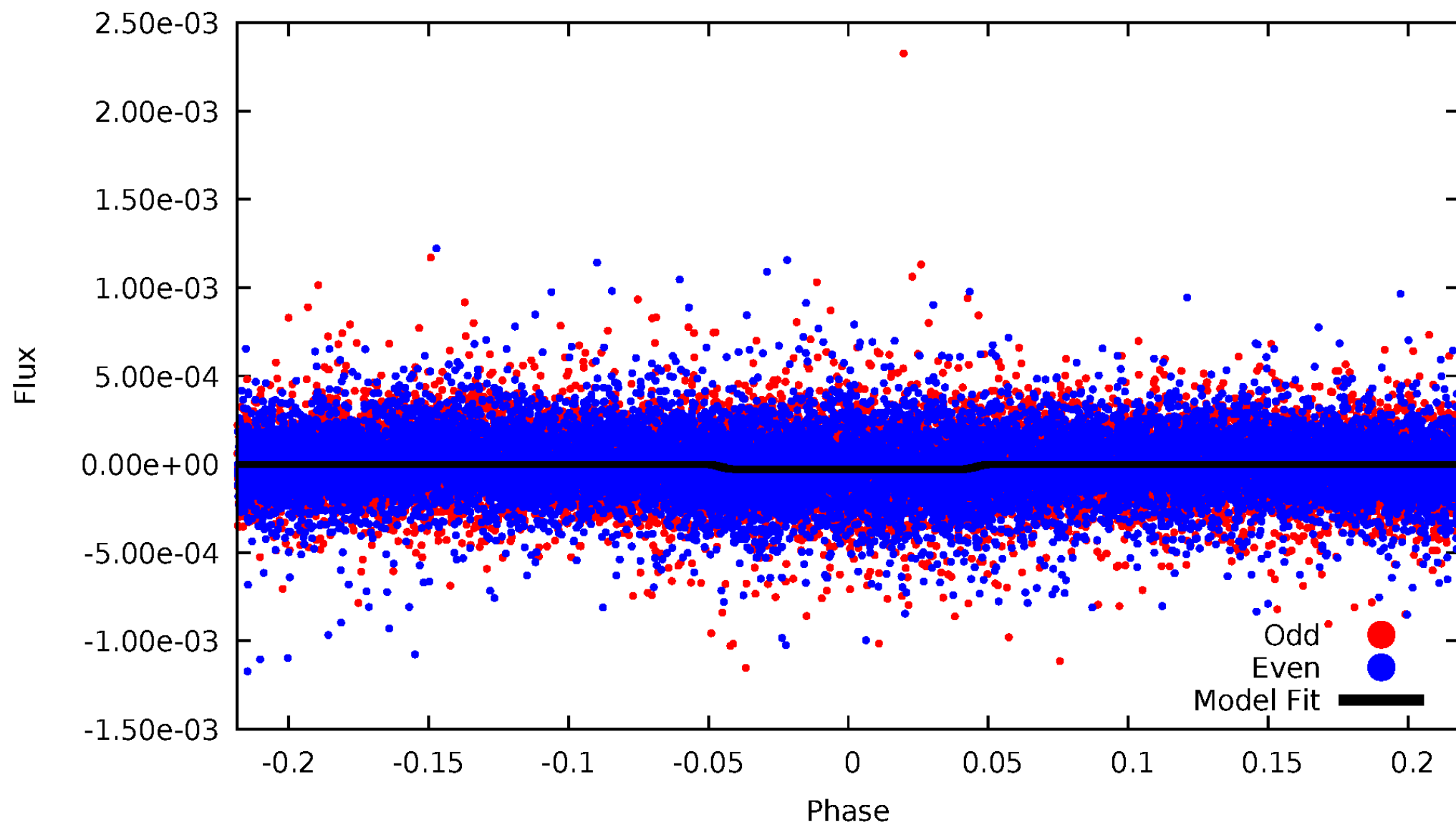
DV Odd/Even

TCE 006048137-01

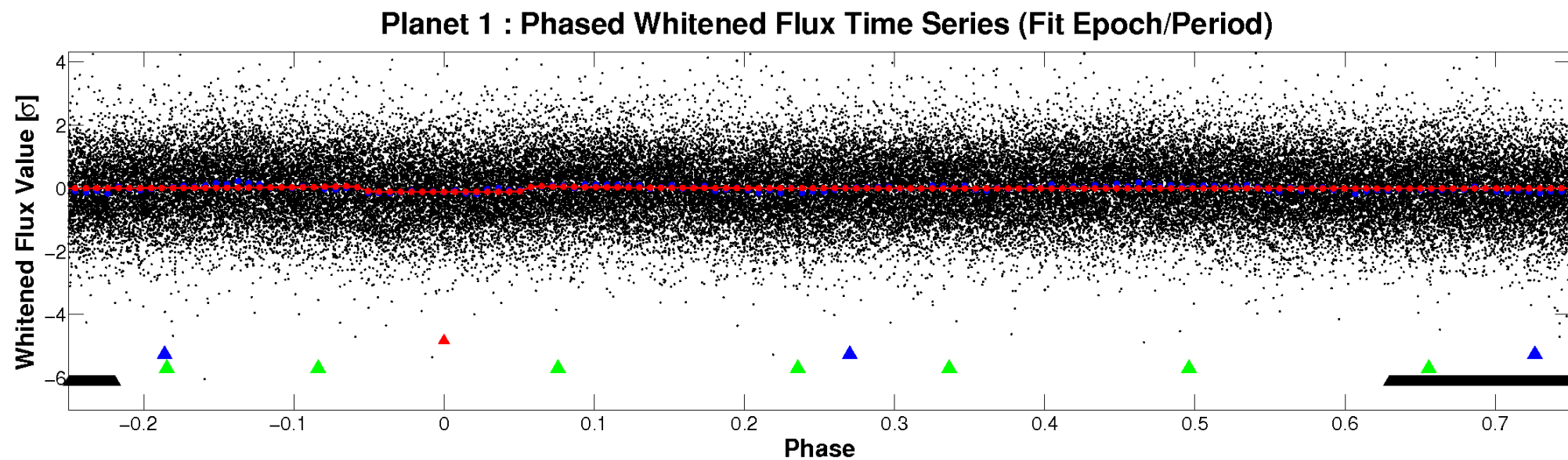
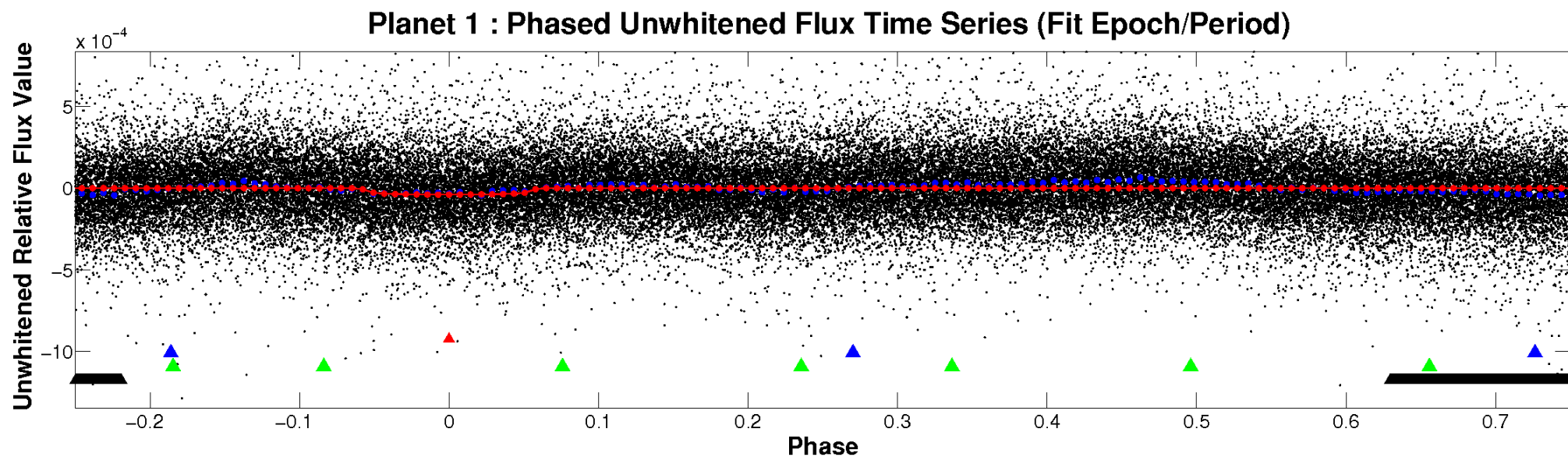


ALT Odd/Even

TCE 006048137-01

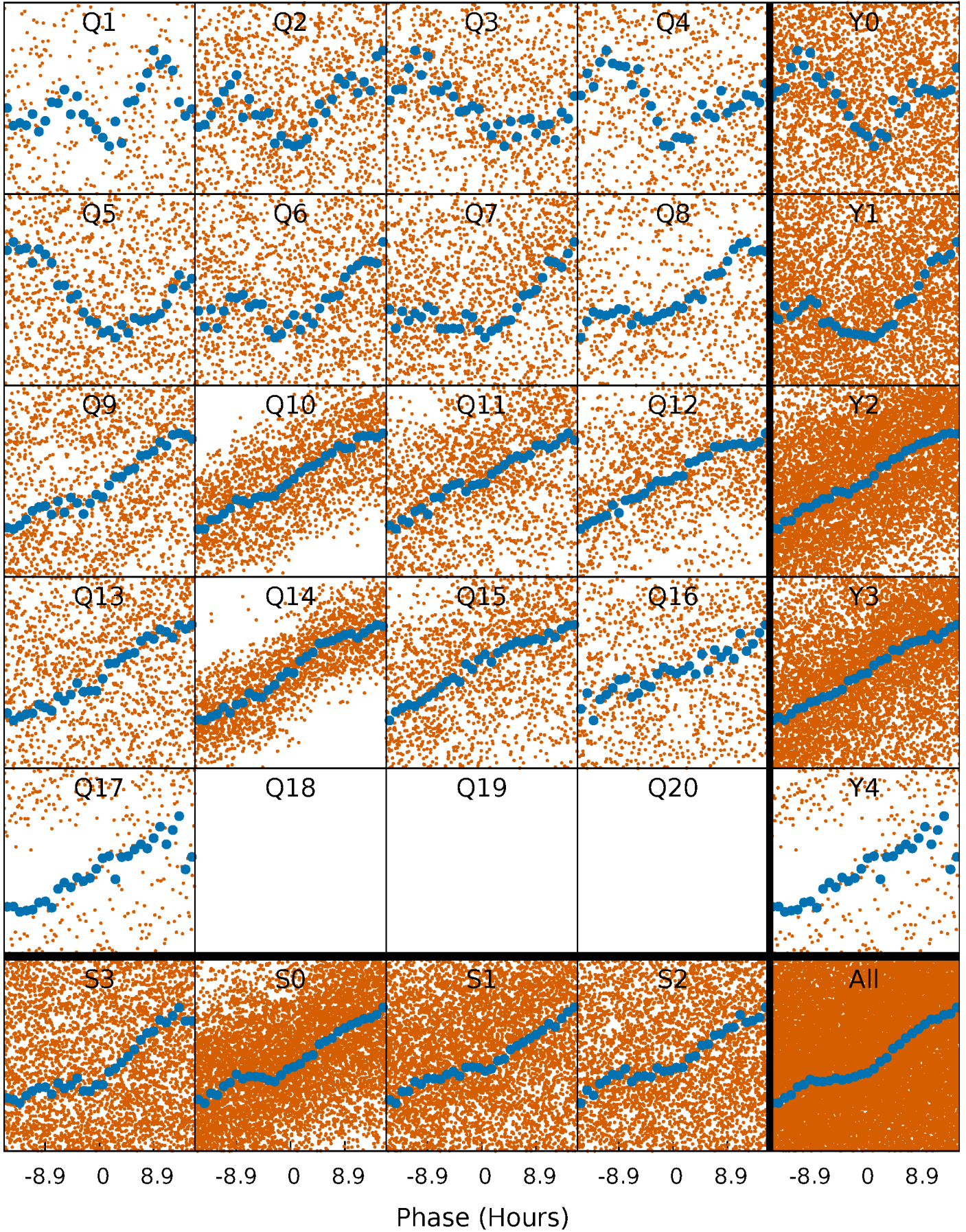


Non-Whitened Vs. Whitened Light Curve



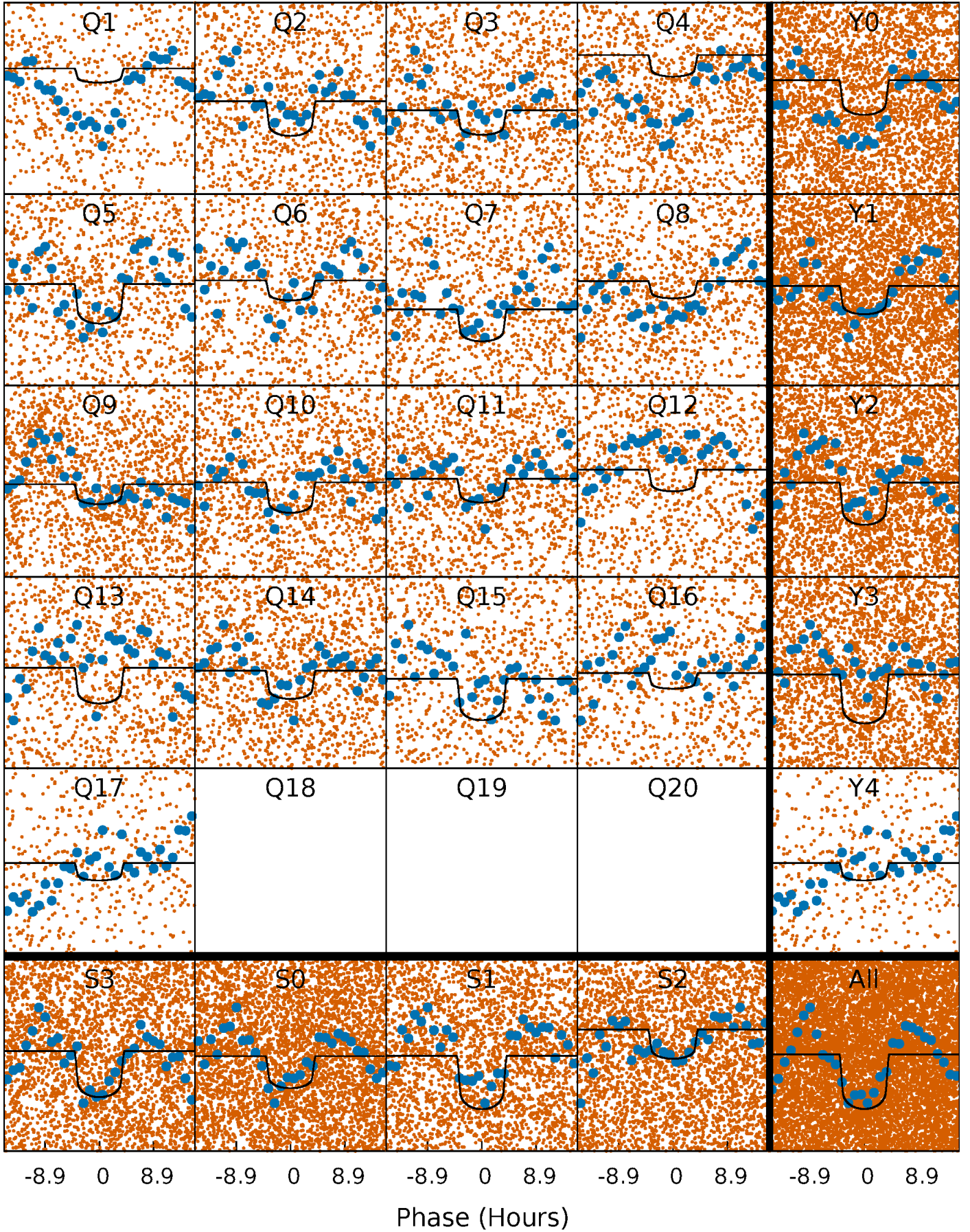
PDC Quarter-Phased Transit Curves

TCE 006048137-01 P= 2.828329 Days $T_0=132.489678$ (BKJD)



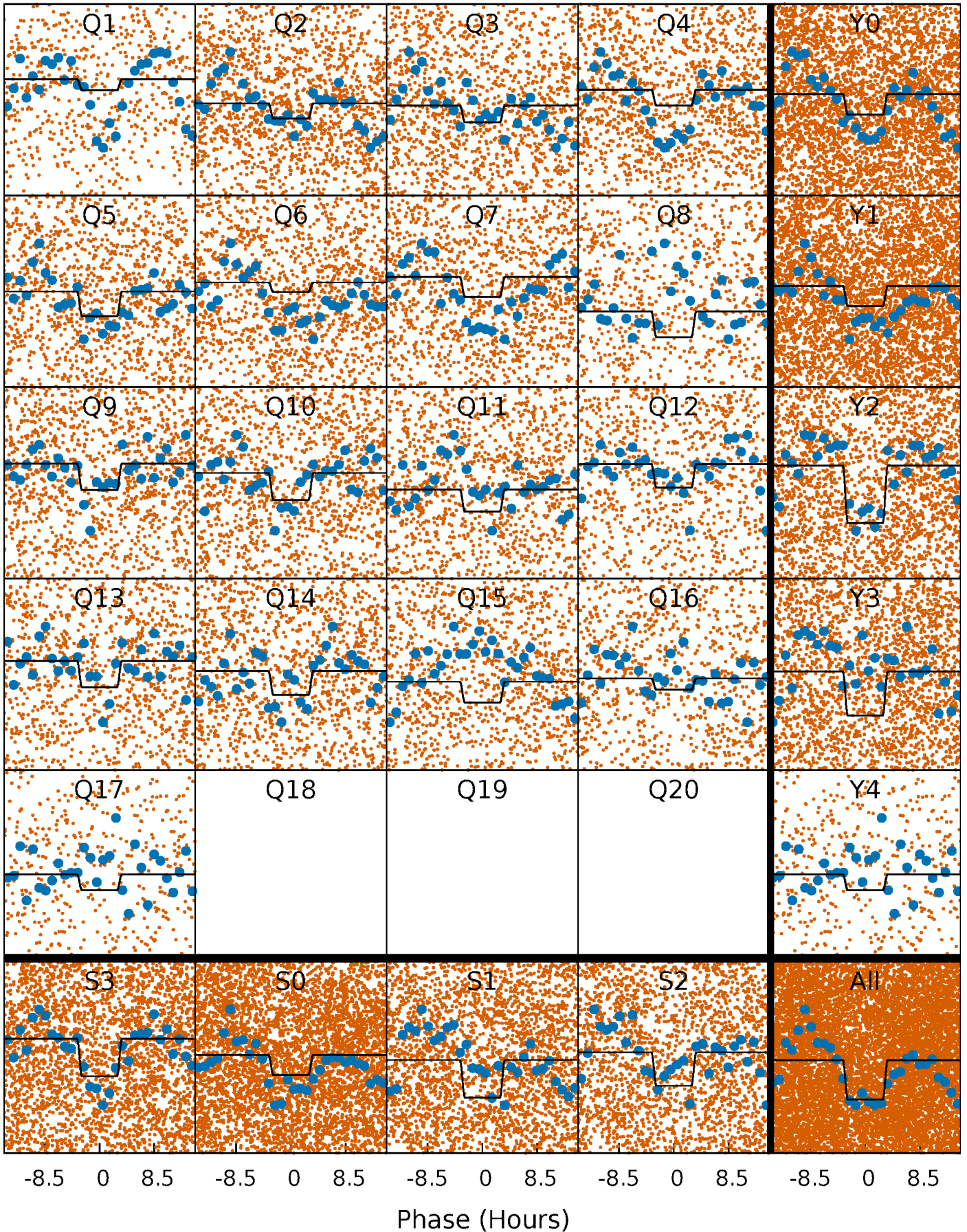
DV Quarter-Phased Transit Curves

TCE 006048137-01 P= 2.828329 Days $T_0=132.489678$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

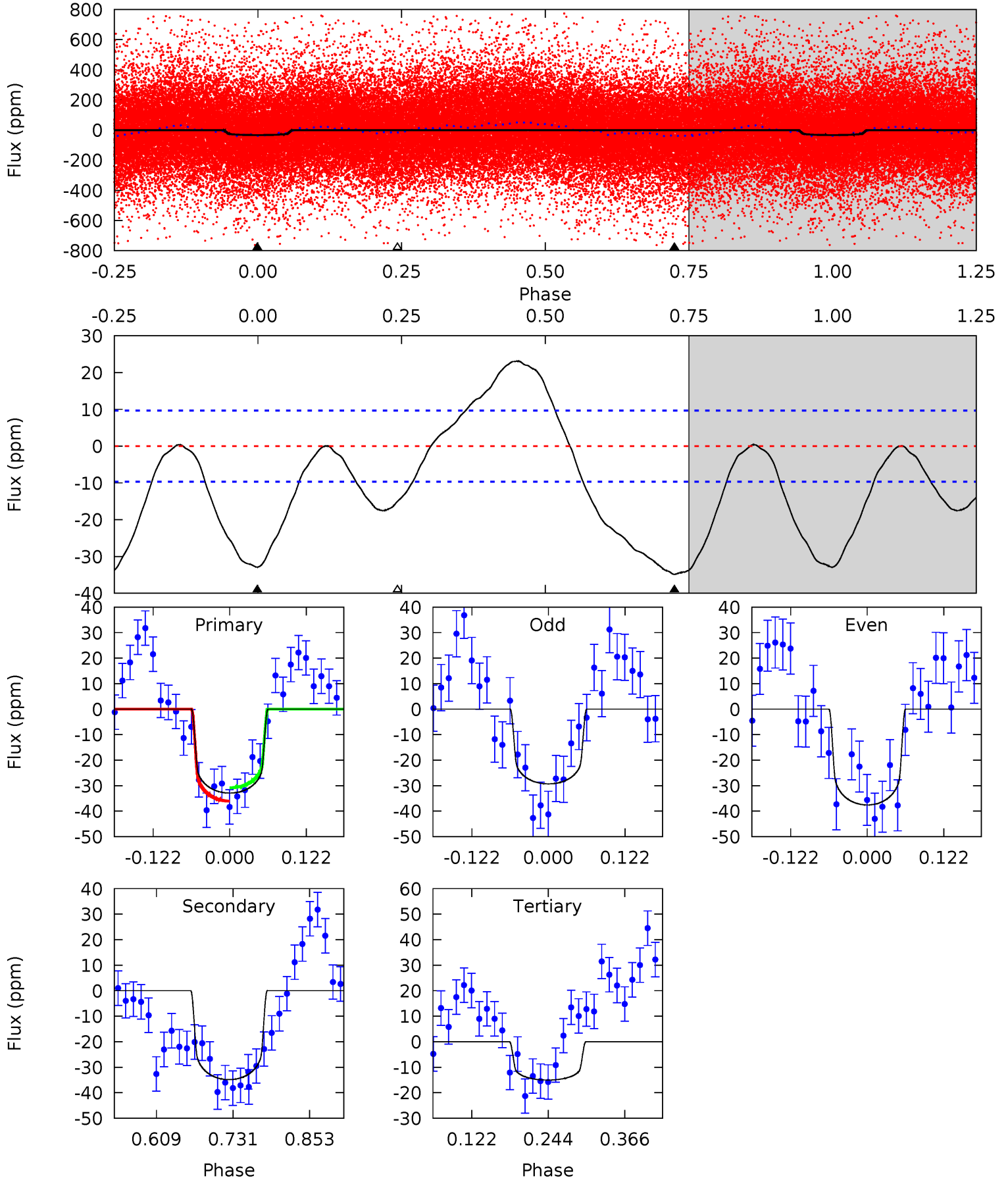
TCE 006048137-01 P= 2.828100 Days $T_0=132.524497$ (BKJD)



DV Model-Shift Uniqueness Test

006048137-01, P = 2.828329 Days, E = 129.661349 Days

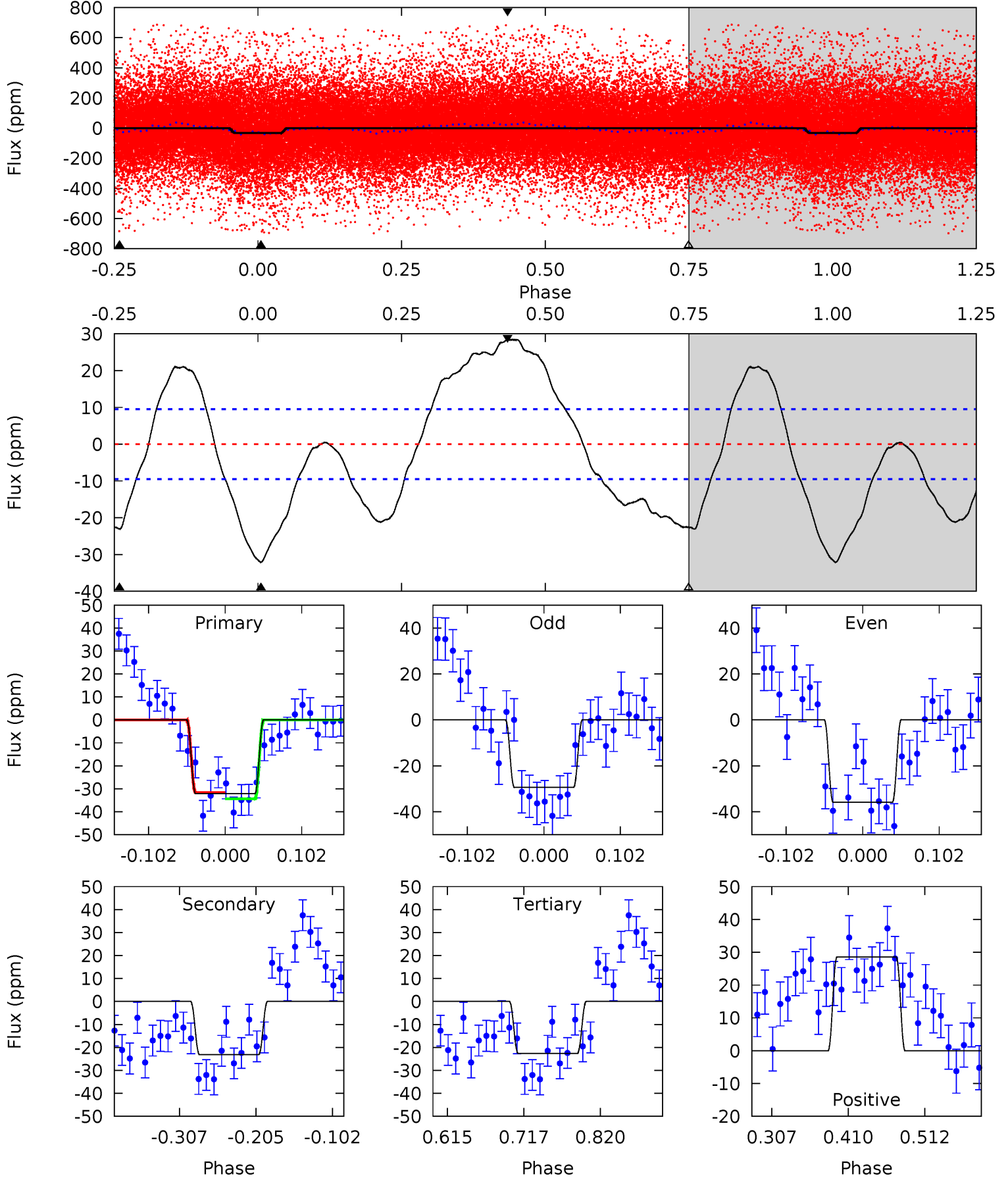
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.4	16.3	7.04	0	4.52	1.55	6.13	8.37	15.4	9.29	16.3	1.94	0.98	0.40	1.23



Alt Model-Shift Uniqueness Test

006048137-01, P = 2.828100 Days, E = 129.696397 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.4	11.1	10.9	13.7	4.56	1.63	8.38	4.56	1.73	0.23	-2.60	1.57	0.97	0.47	0.67



Stellar Parameters For KIC 006048137

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6582^{+189}_{-237}	$4.084^{+0.293}_{-0.158}$	$-0.520^{+0.300}_{-0.300}$	$1.559^{+0.423}_{-0.517}$	$1.075^{+0.164}_{-0.135}$	$0.400^{+0.764}_{-0.176}$
	+3%/-4%	+7%/-4%	+58%/-58%	+27%/-33%	+15%/-13%	+191%/-44%
Source	PHO54	PHO54	PHO54	DSEP		

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

Secondary Eclipse Parameters for KIC 006048137-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-35 ± 2	$1.10^{+0.29}_{-0.26}$	2487^{+211}_{-223}	6135^{+707}_{-497}	25^{+19}_{-9}
Alt.	-23 ± 2	$0.88^{+0.26}_{-0.23}$	2509^{+195}_{-253}	6176^{+915}_{-623}	26^{+22}_{-11}

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

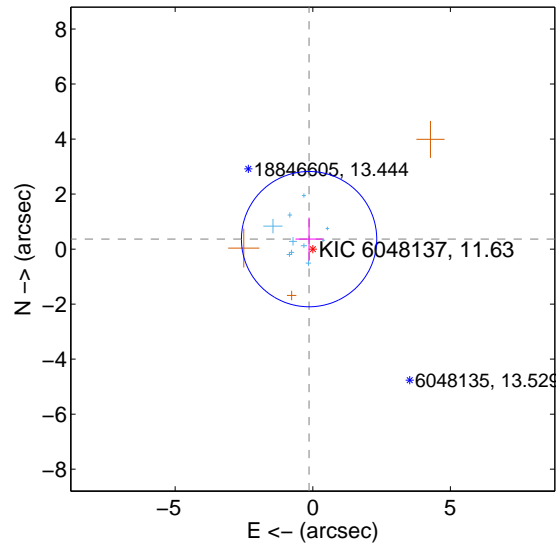
Supplemental centroid analysis for 006048137-01. **Kepler magnitude: 11.63.** Transit SNR 10.11

There are 10 quarters with good PRF difference image offsets

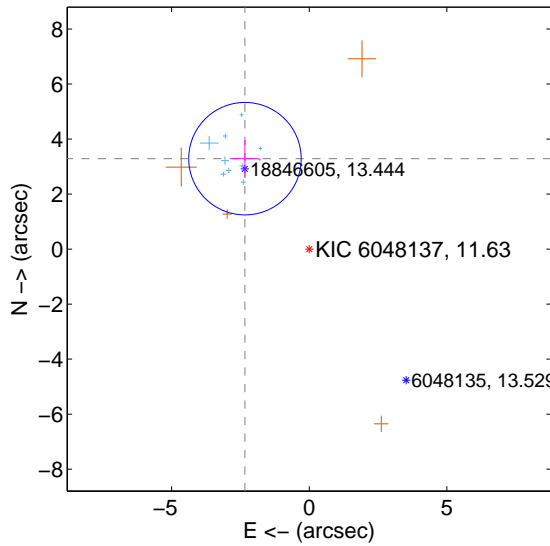
The OOT PRF centroid is offset from the target star catalog position by about 3.64 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.386 ± 0.820	0.47	0.134 ± 0.493	0.362 ± 0.785
PRF-fit source offset from KIC position	4.033 ± 0.681	5.92	2.336 ± 0.495	3.287 ± 0.679
photometric centroid source offset	4.47 ± 0.95	4.68	2.68 ± 0.81	3.57 ± 1.03

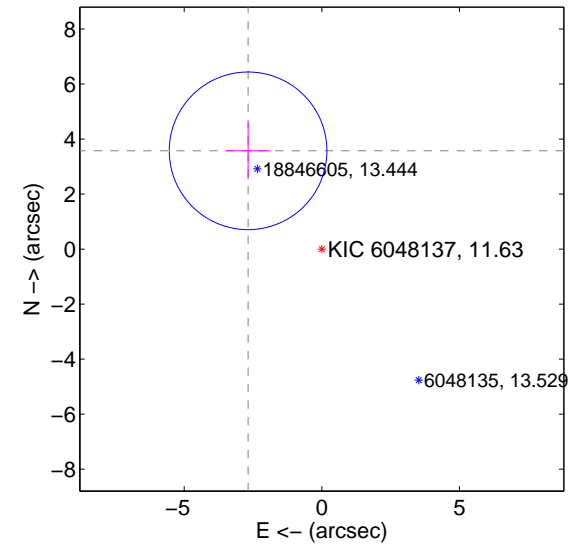
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

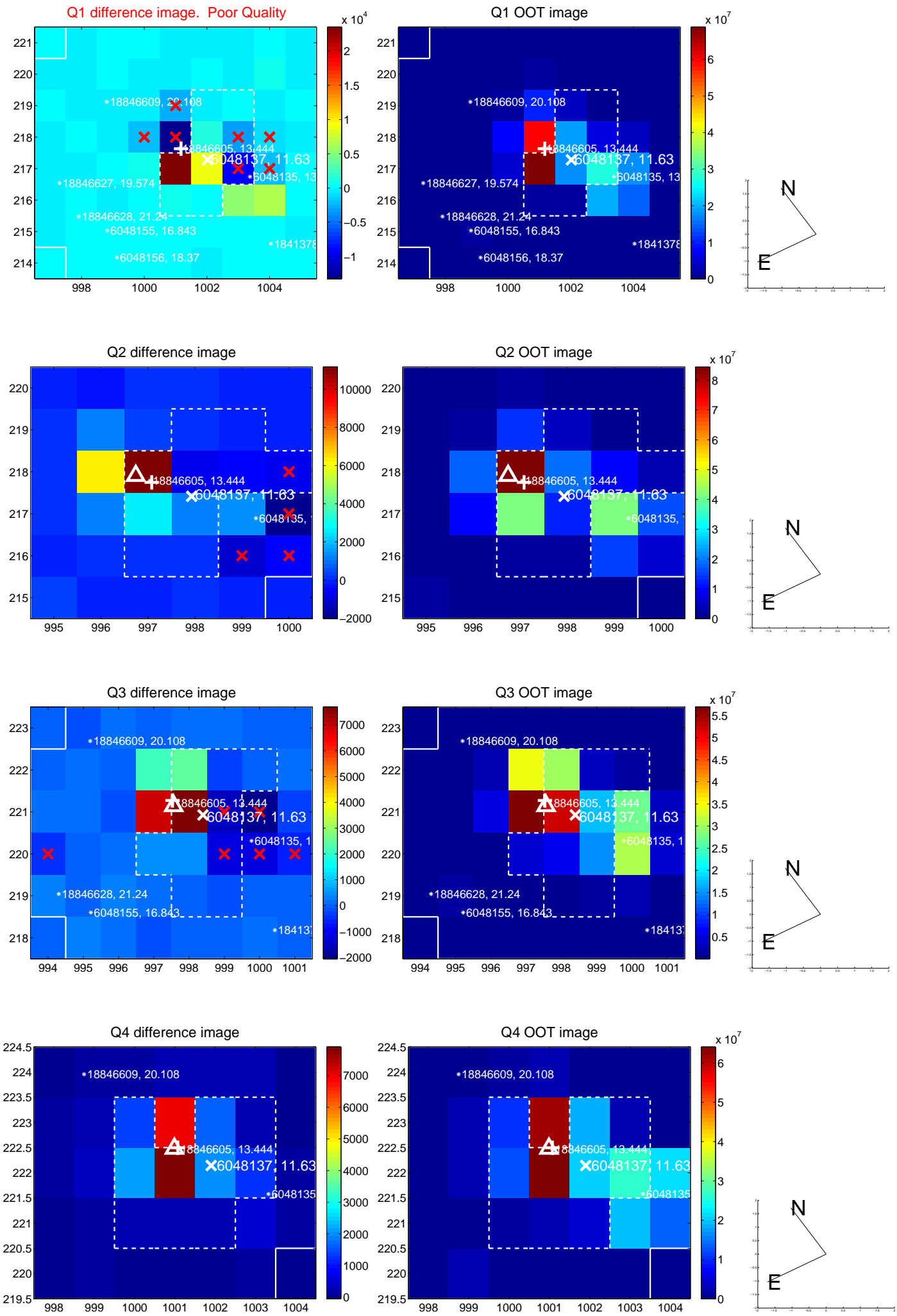


offset from photometric centroids

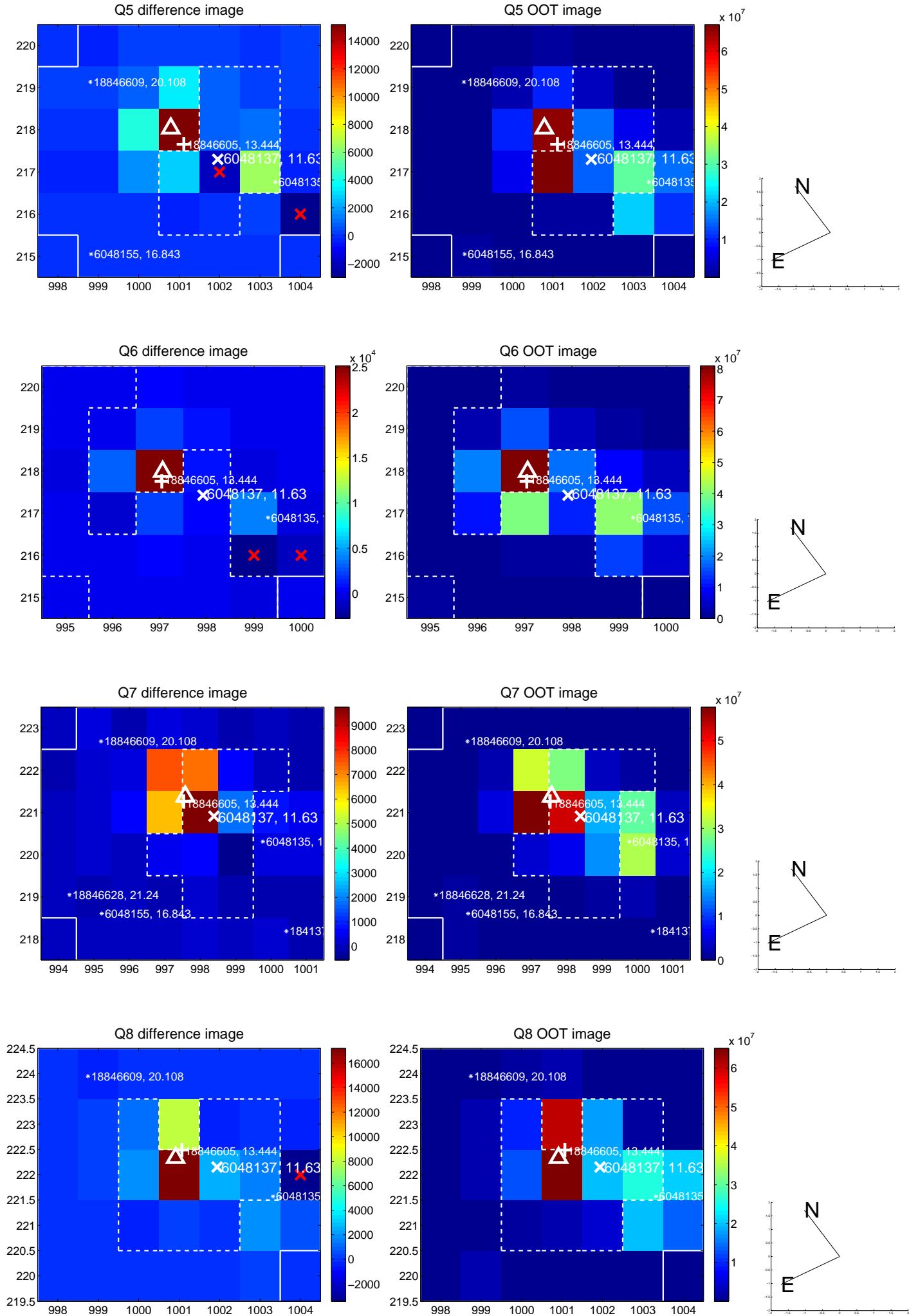


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

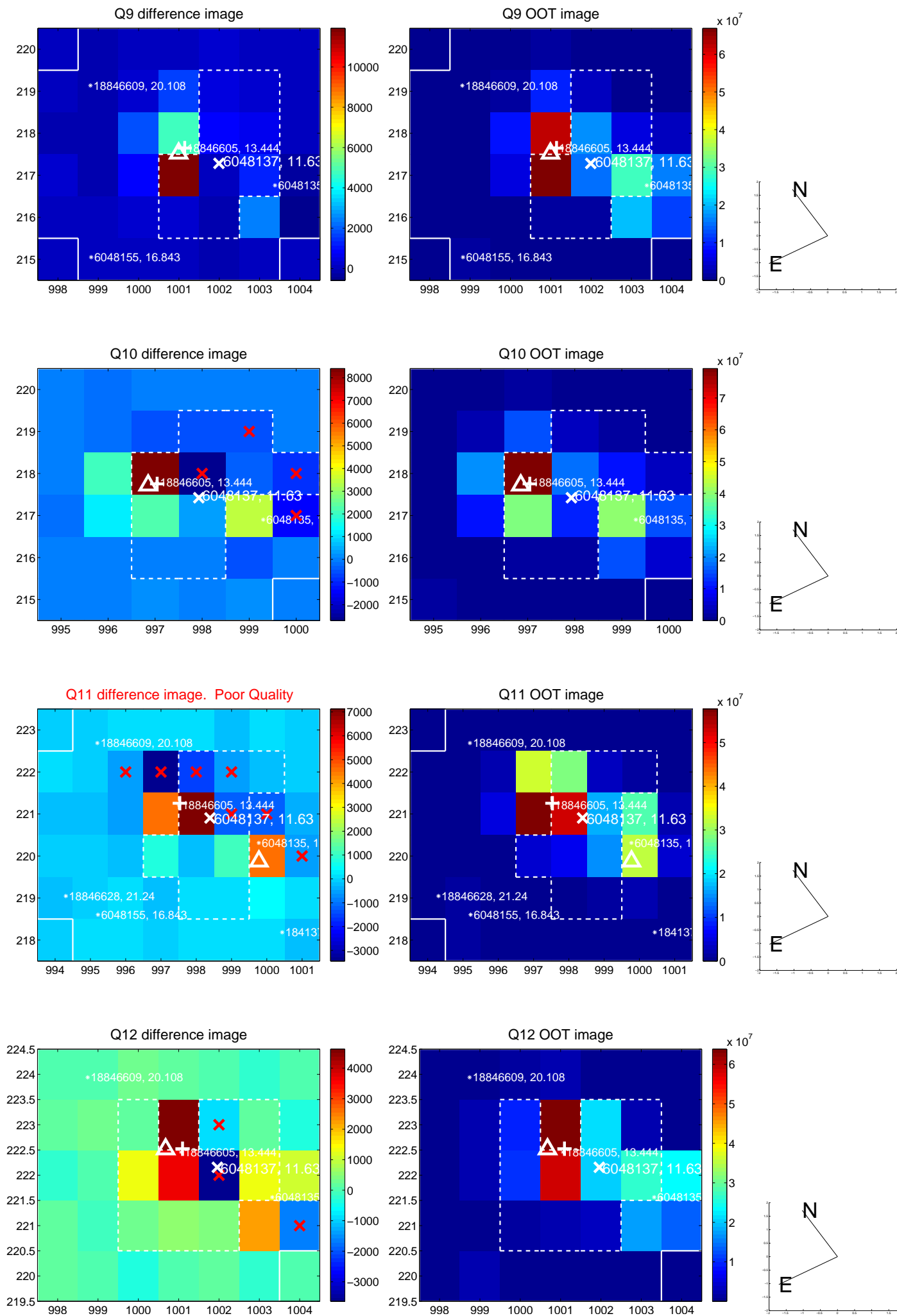
white \times : KIC target position; $+$: OOT centroid; Δ : difference centroid. red \times : large negative pixel value.



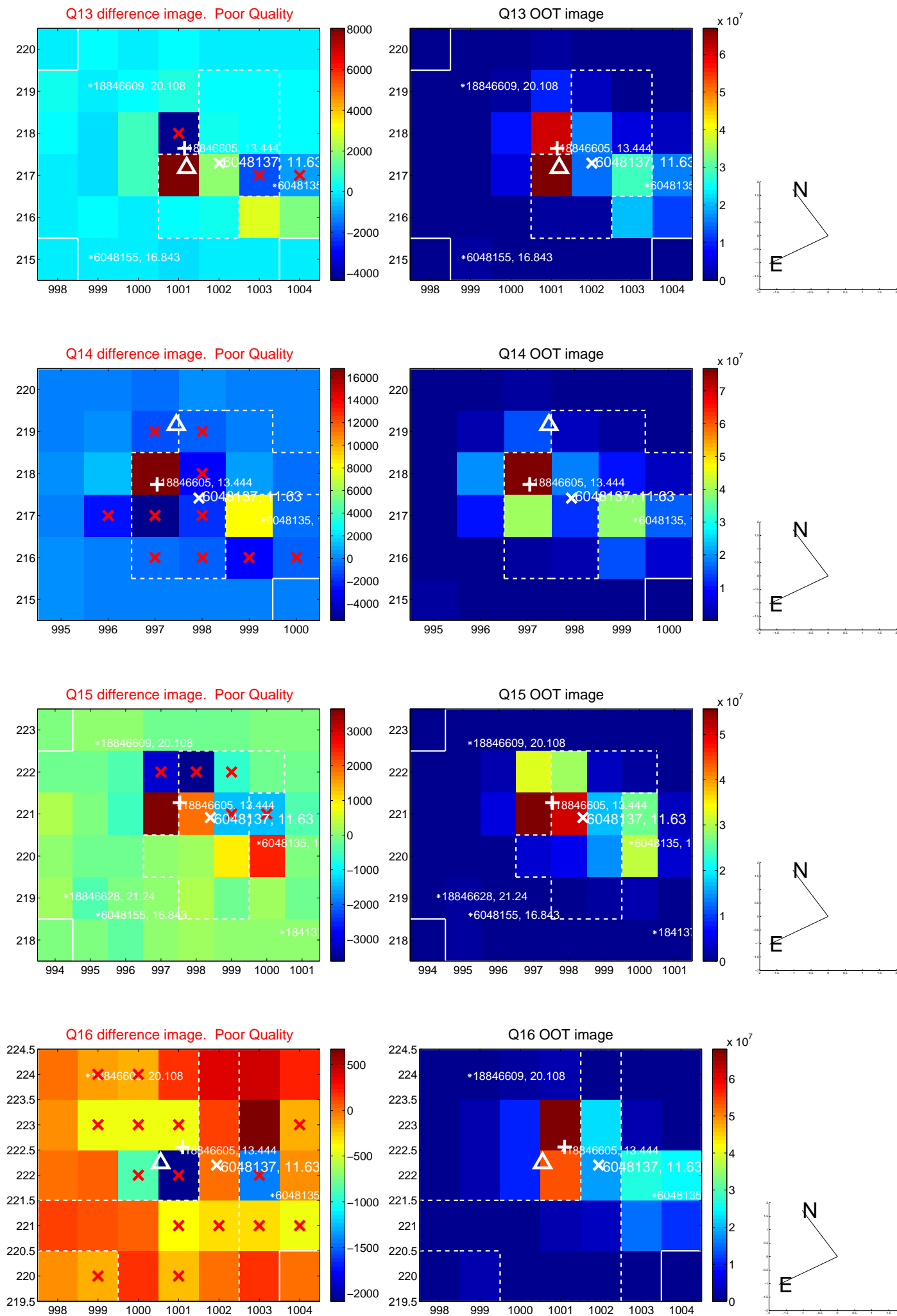
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



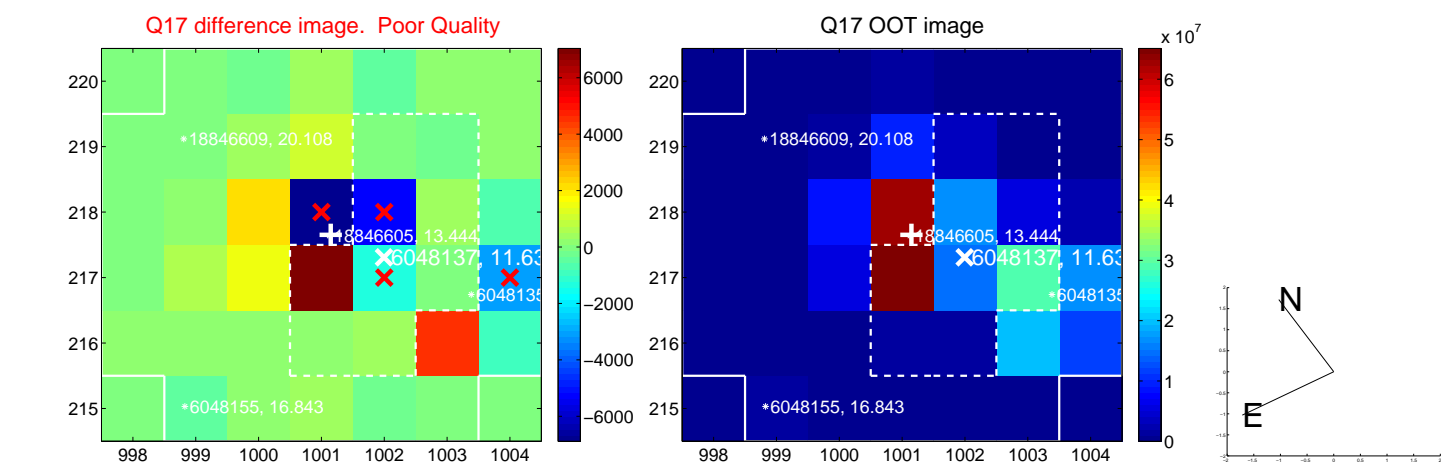
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



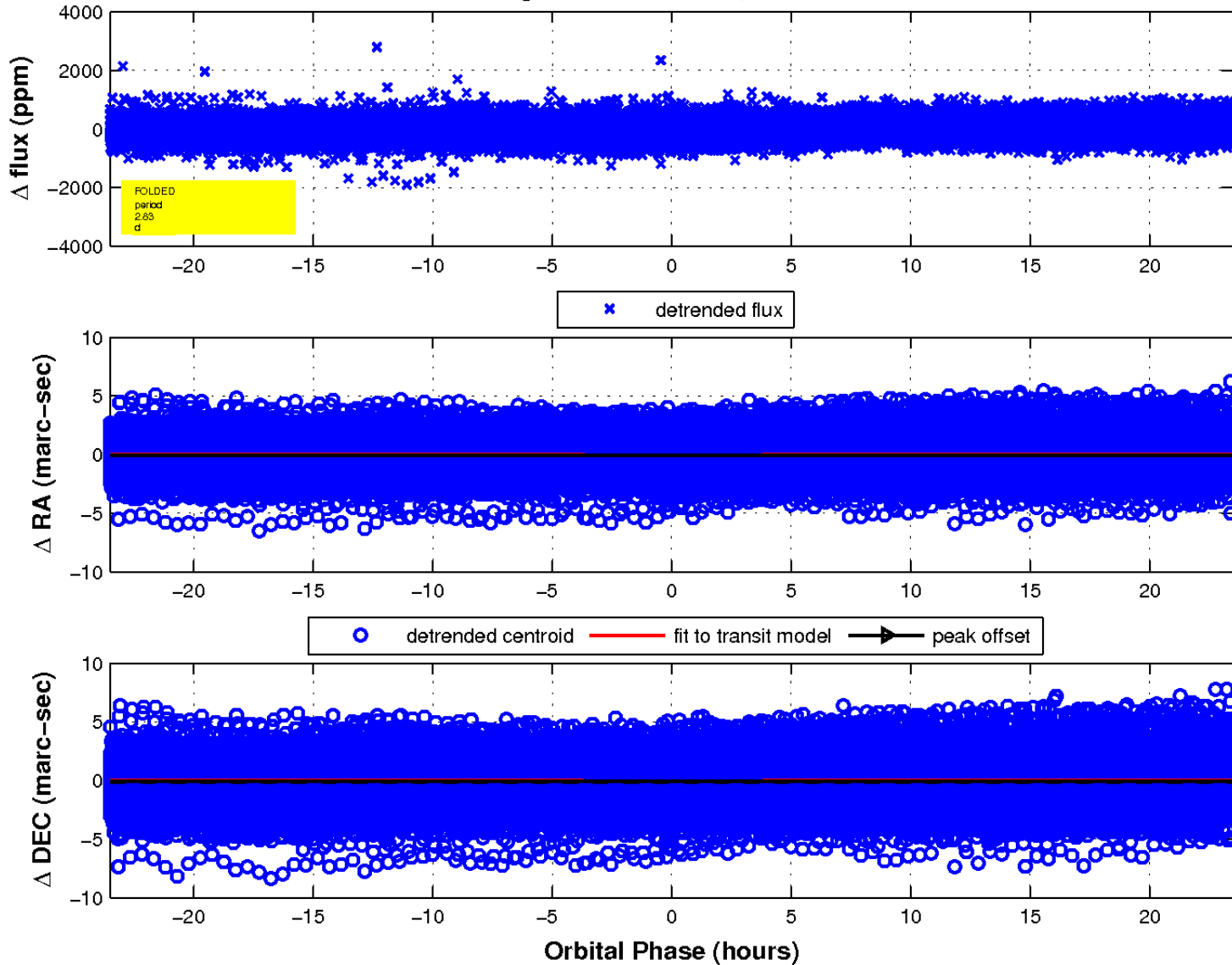
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

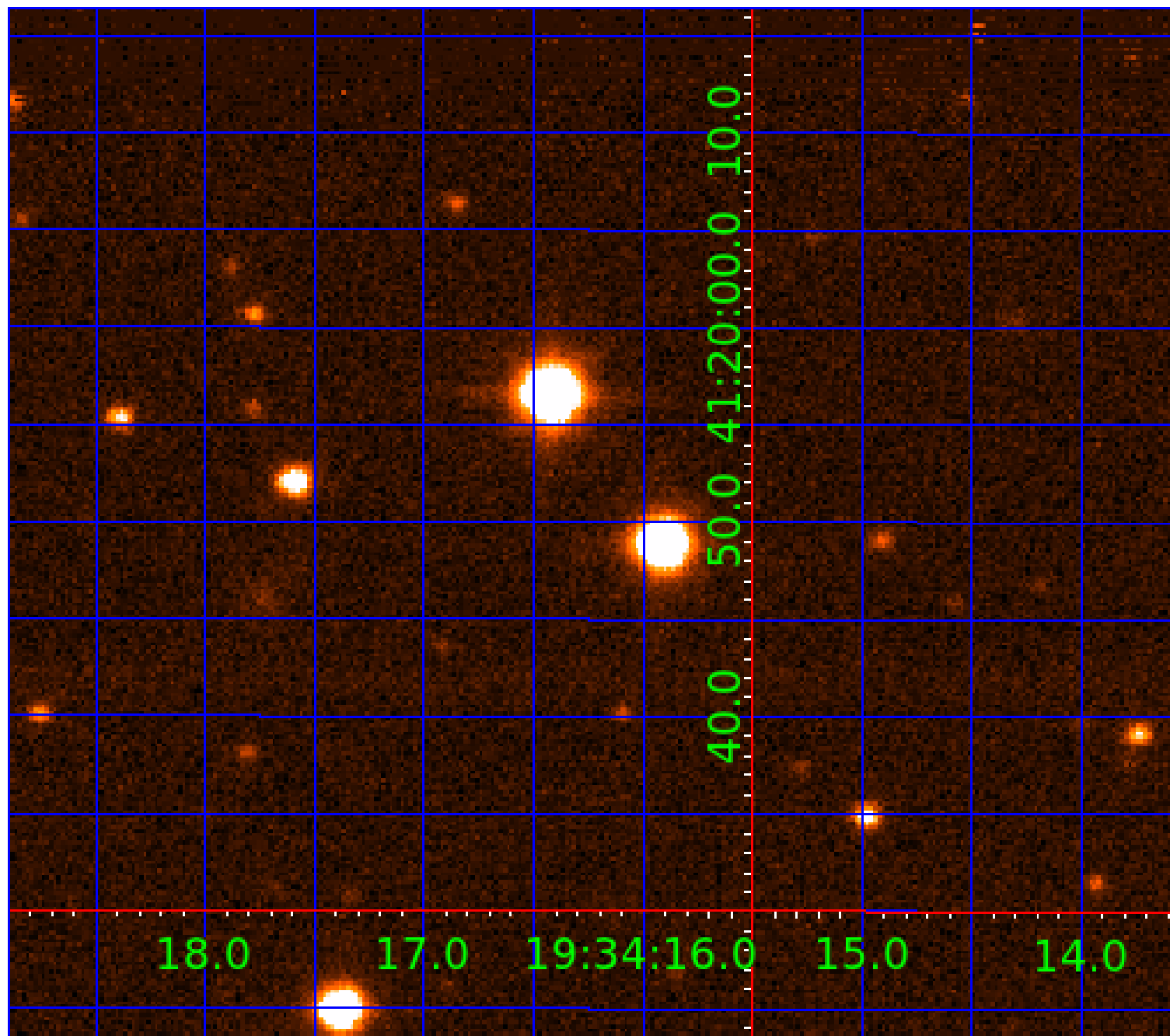


fluxWeightedCentroids, Planet 1 of 4



UKIRT Image

Declination



KIC 006048137

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})
006048137-01	OBS	No	2.828329	132.489678	39.5	7.830	7.8	10.1	1.56	6582	1.14	2540.09
006048137-03	OBS	No	219.421329	255.059338	200.1	11.331	13.8	5.8	1.56	6582	2.39	7.68
006048137-04	OBS	No	2.829162	134.270096	36.5	24.242	8.4	8.4	1.56	6582	1.13	2539.10

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006048137-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_KIC_POS
006048137-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006048137-04	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_ZUMA—SWEET_NTL—LPP_DV—LPP_ALT—SAME_NTL_PERIOD—CENT_KIC_POS—HALO_GHOST

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

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

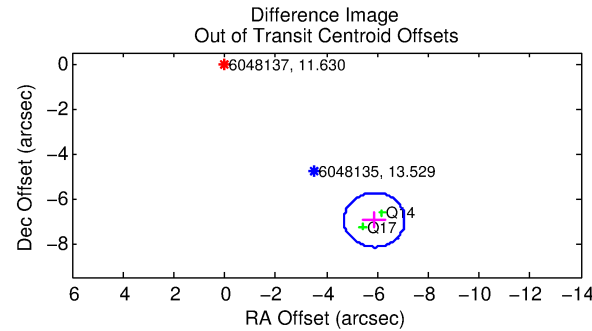
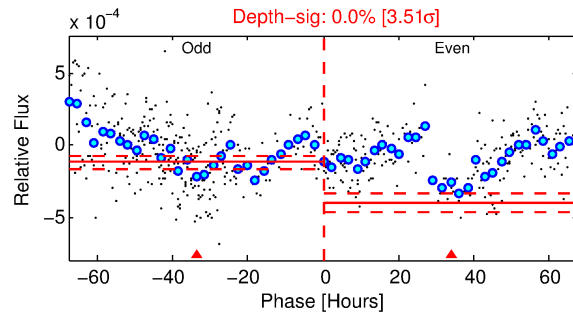
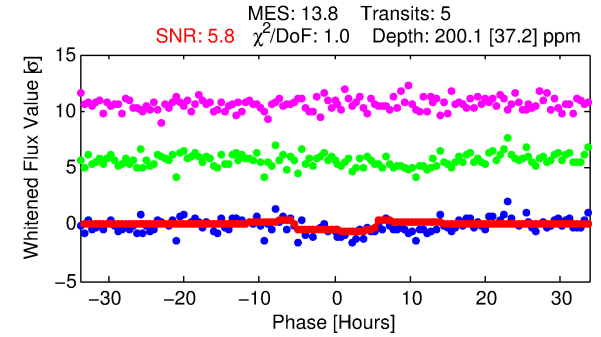
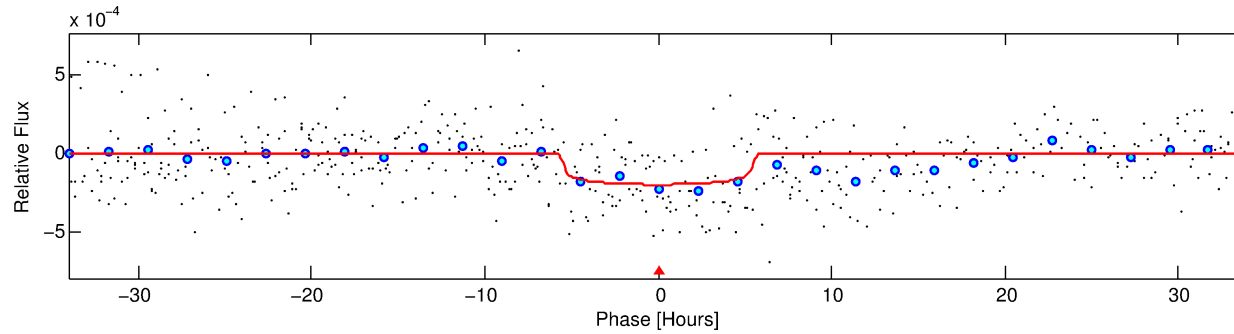
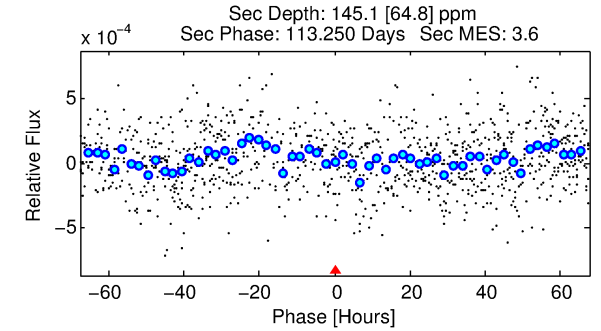
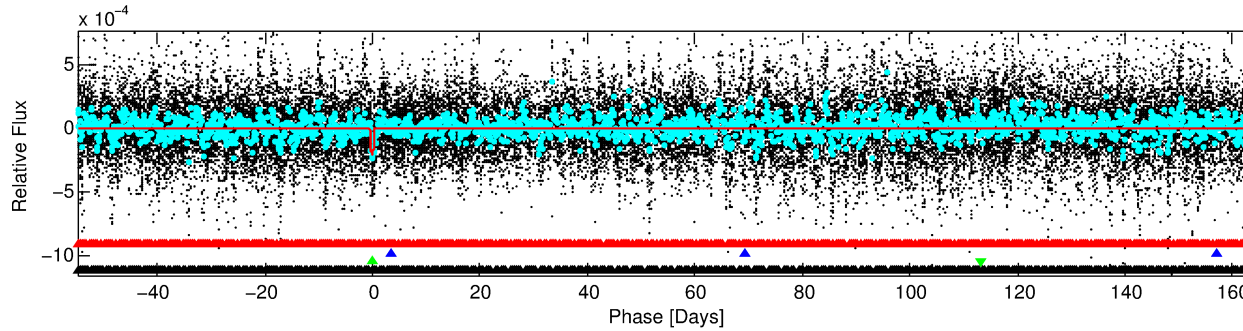
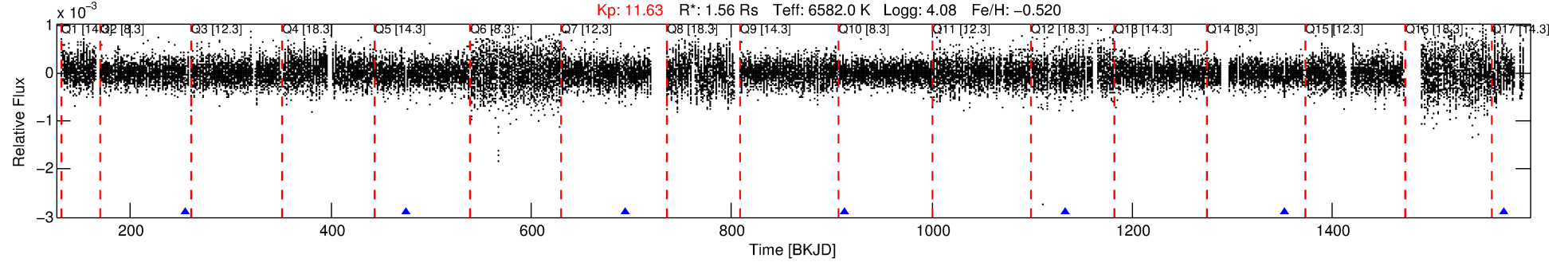
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006048137-03

No Significant Match Found

DV One-Page Summary

KIC: 6048137 Candidate: 3 of 4 Period: 219.421 d



DV Fit Results:

Period = 219.42133 [0.00493] d
Epoch = 255.0593 [0.0171] BKJD
Rp/R* = 0.0141 [0.0058]
a/R* = 101.56 [223.70]
b = 0.75 [1.32]
Seff = 7.68 [4.00]
Teq = 424 [55] K
Rp = 2.39 [1.26] Re
a = 0.7296 [0.2301] AU
Ag = 7432.92 [7866.72] [0.94σ]
Teffp = 6093 [1437] K [3.94σ]

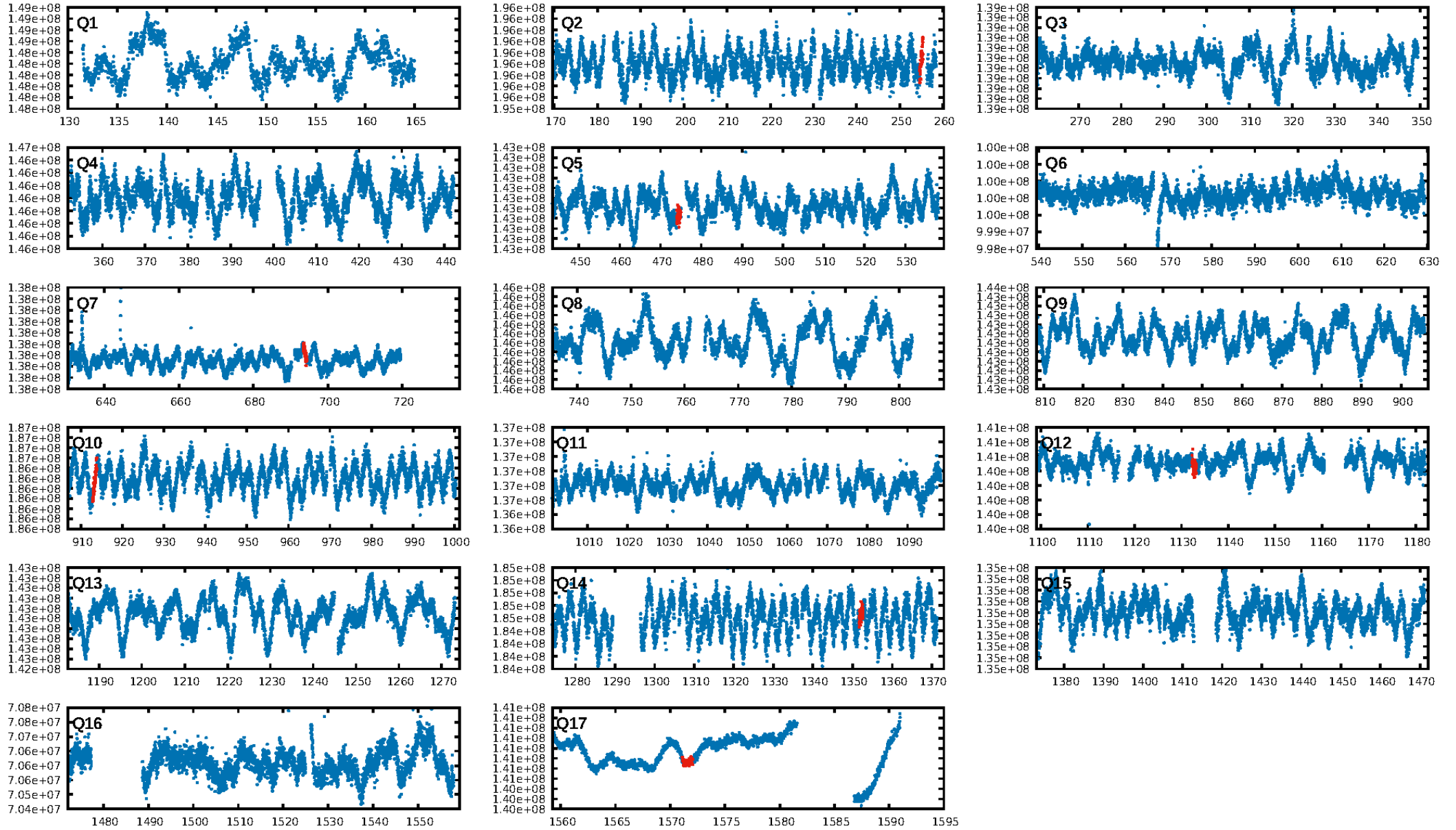
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [194.25σ]
LongPeriod-sig: 100.0% [491.70σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 94.8%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: -59.17
Centroid-sig: 22.2%
Centroid-so: 1.575 arcsec [0.99σ]
OotOffset-rm: 9.115 arcsec [22.70σ]
KicOffset-rm: 5.409 arcsec [14.56σ]
OotOffset-st: 1/0/0/1 [2]
KicOffset-st: 1/0/0/1 [2]
DiffImageQuality-fgm: 0.50 [1/2]
DiffImageOverlap-fno: 0.00 [0/5]

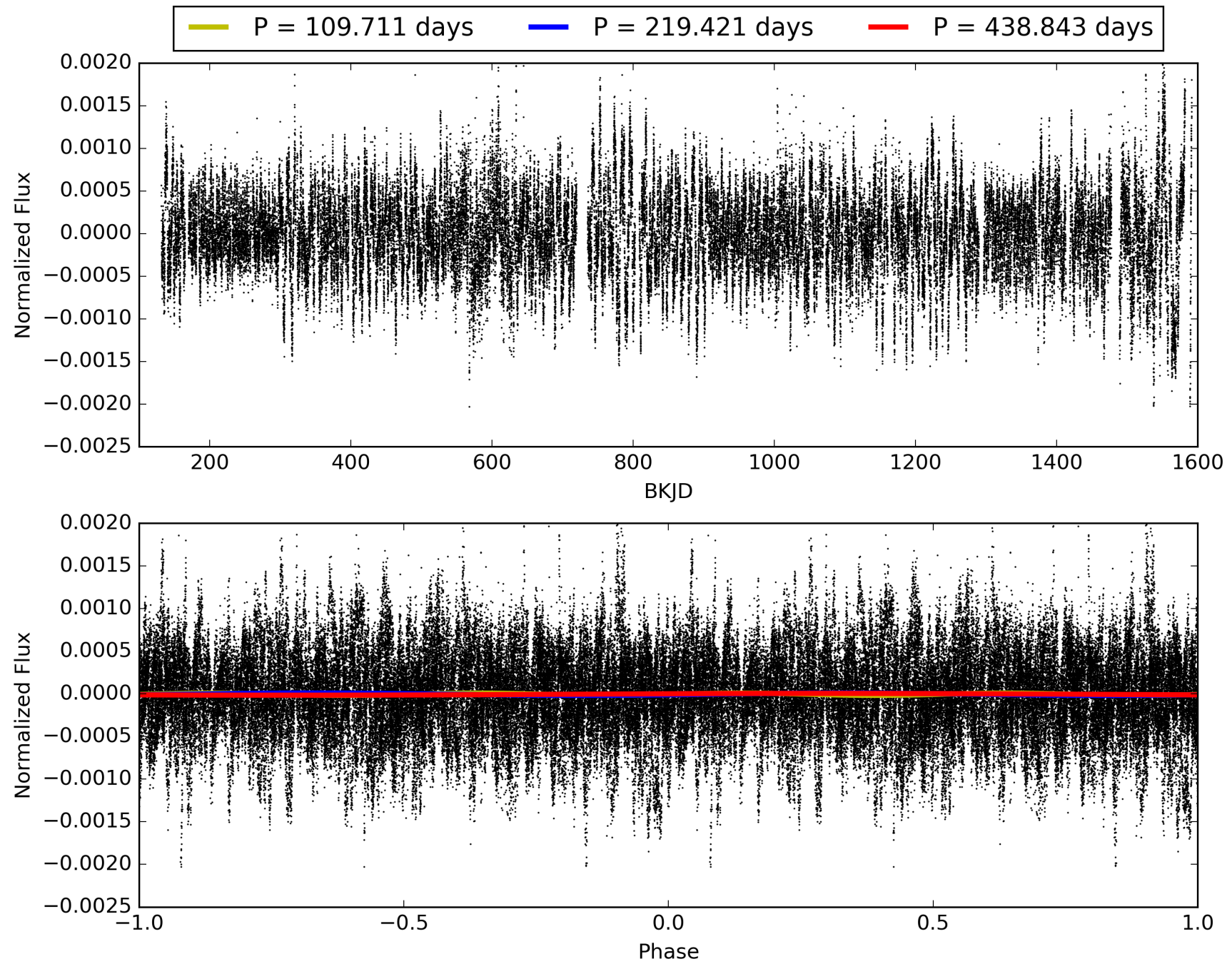
Software Revision: svn-ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 04:05:53 Z

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

TCE 006048137-03, PDC Light Curves

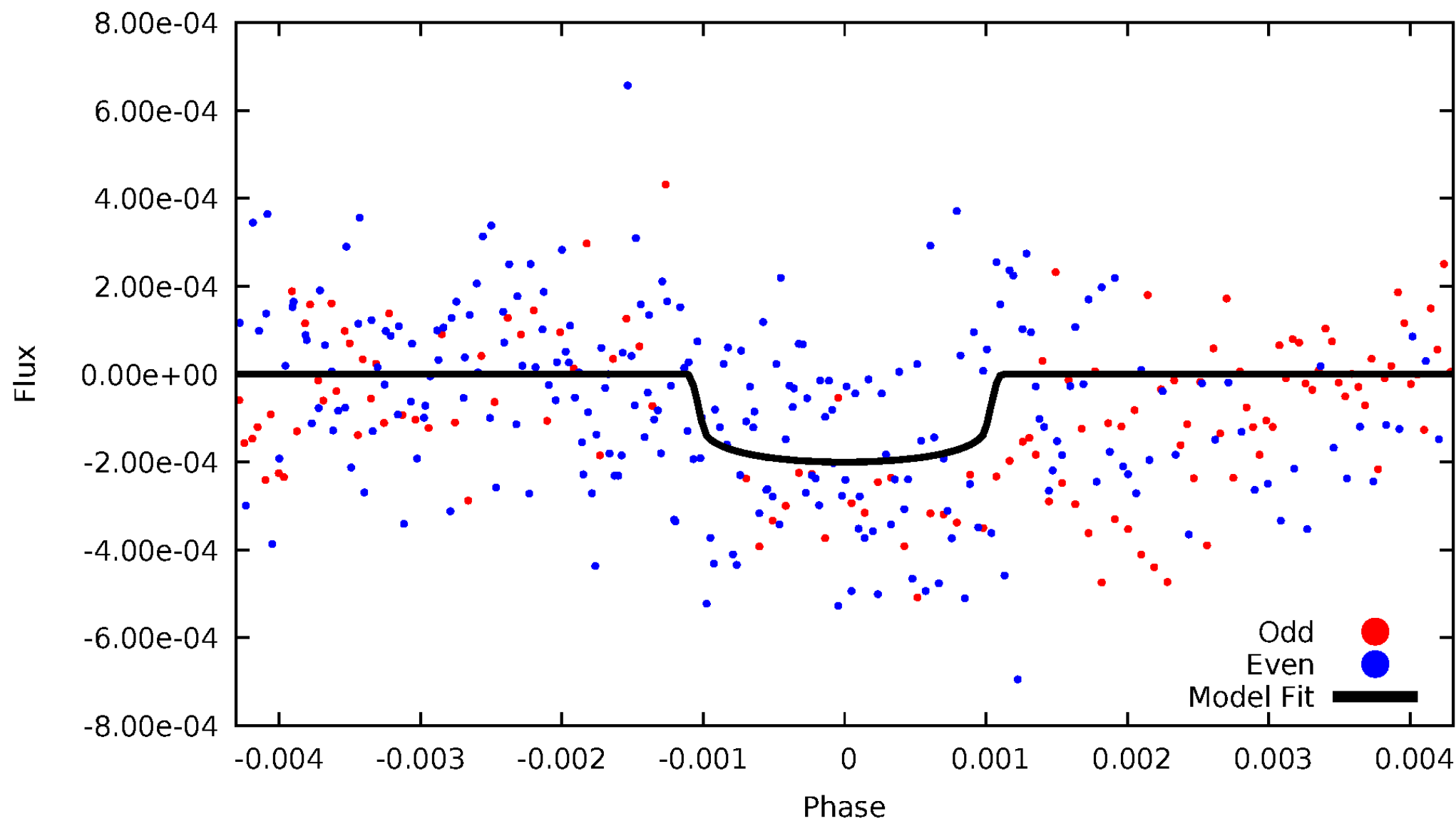


TCE 006048137-03



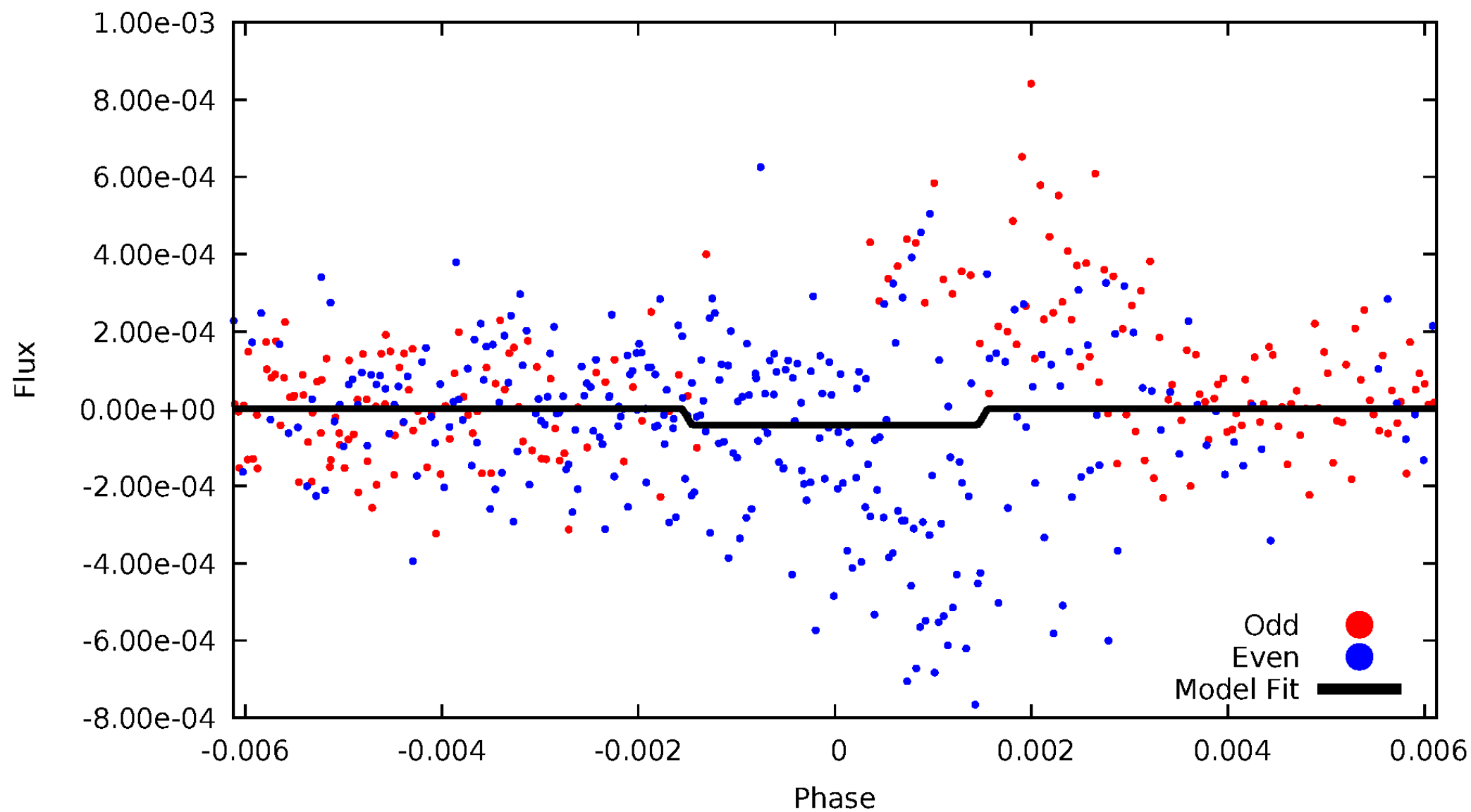
DV Odd/Even

TCE 006048137-03



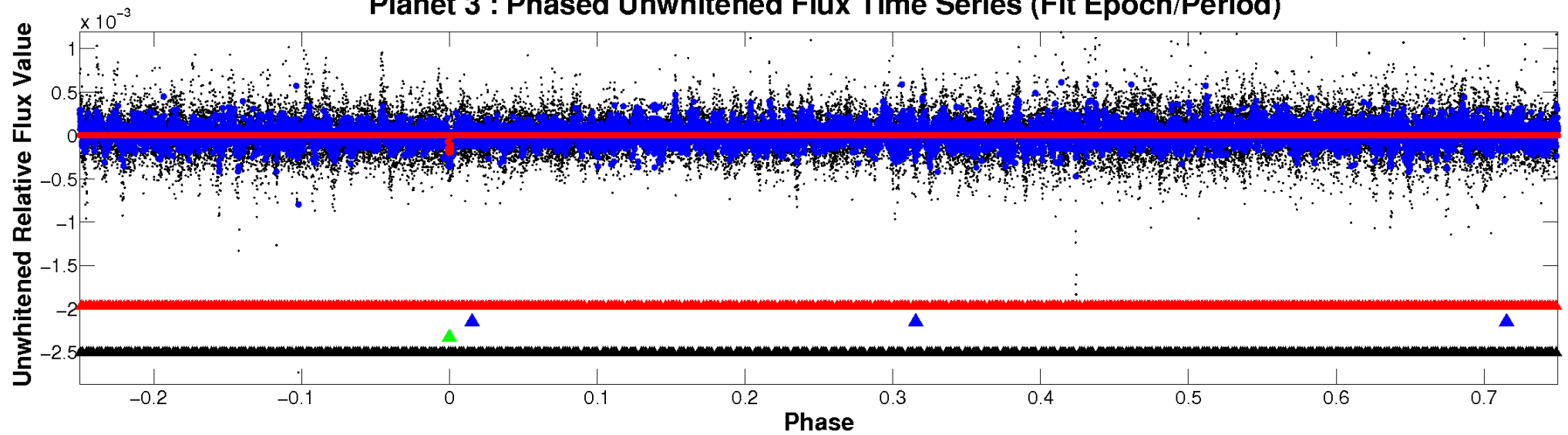
ALT Odd/Even

TCE 006048137-03

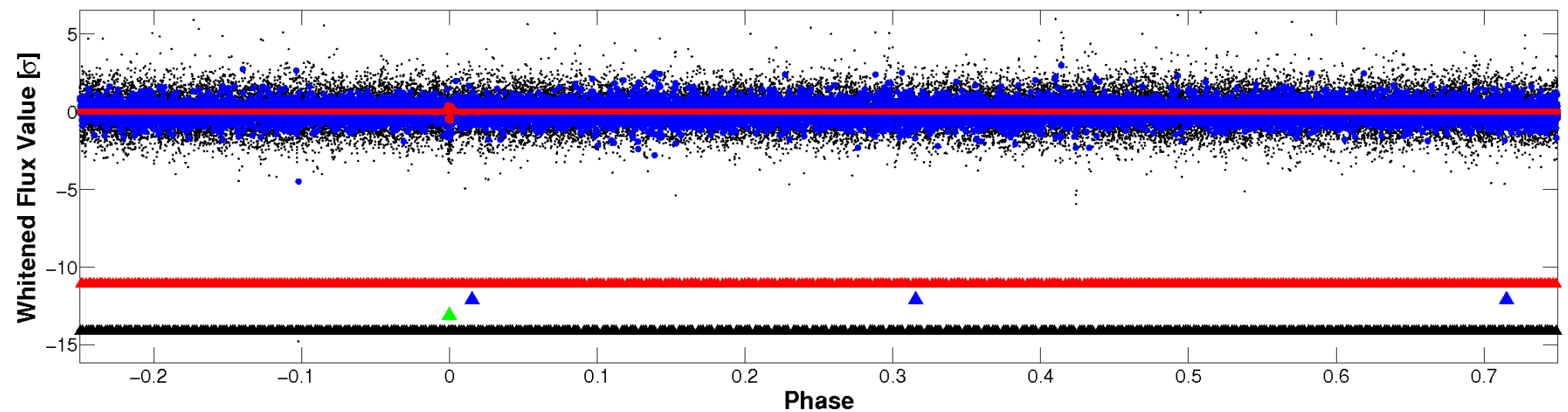


Non-Whitened Vs. Whitened Light Curve

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

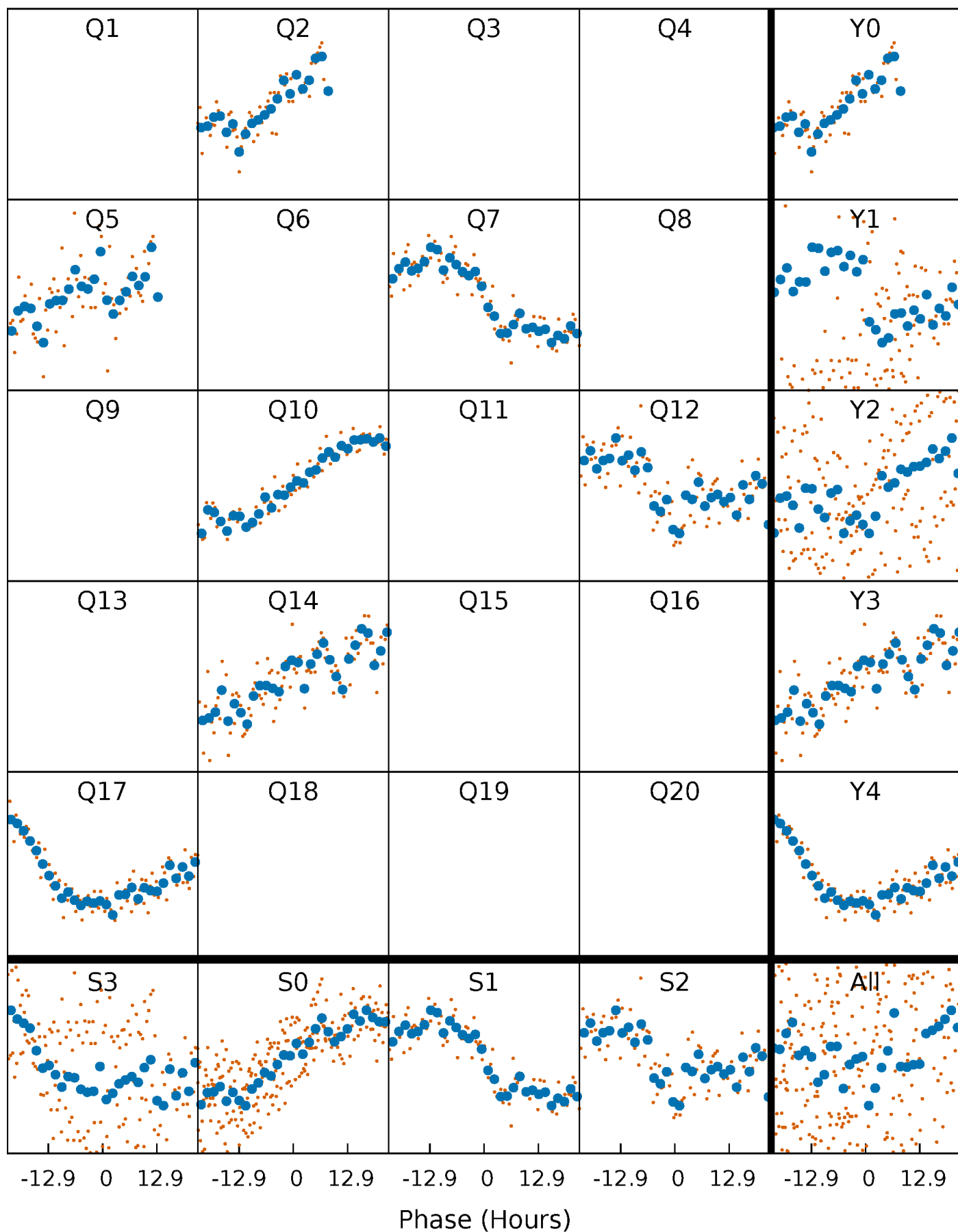


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



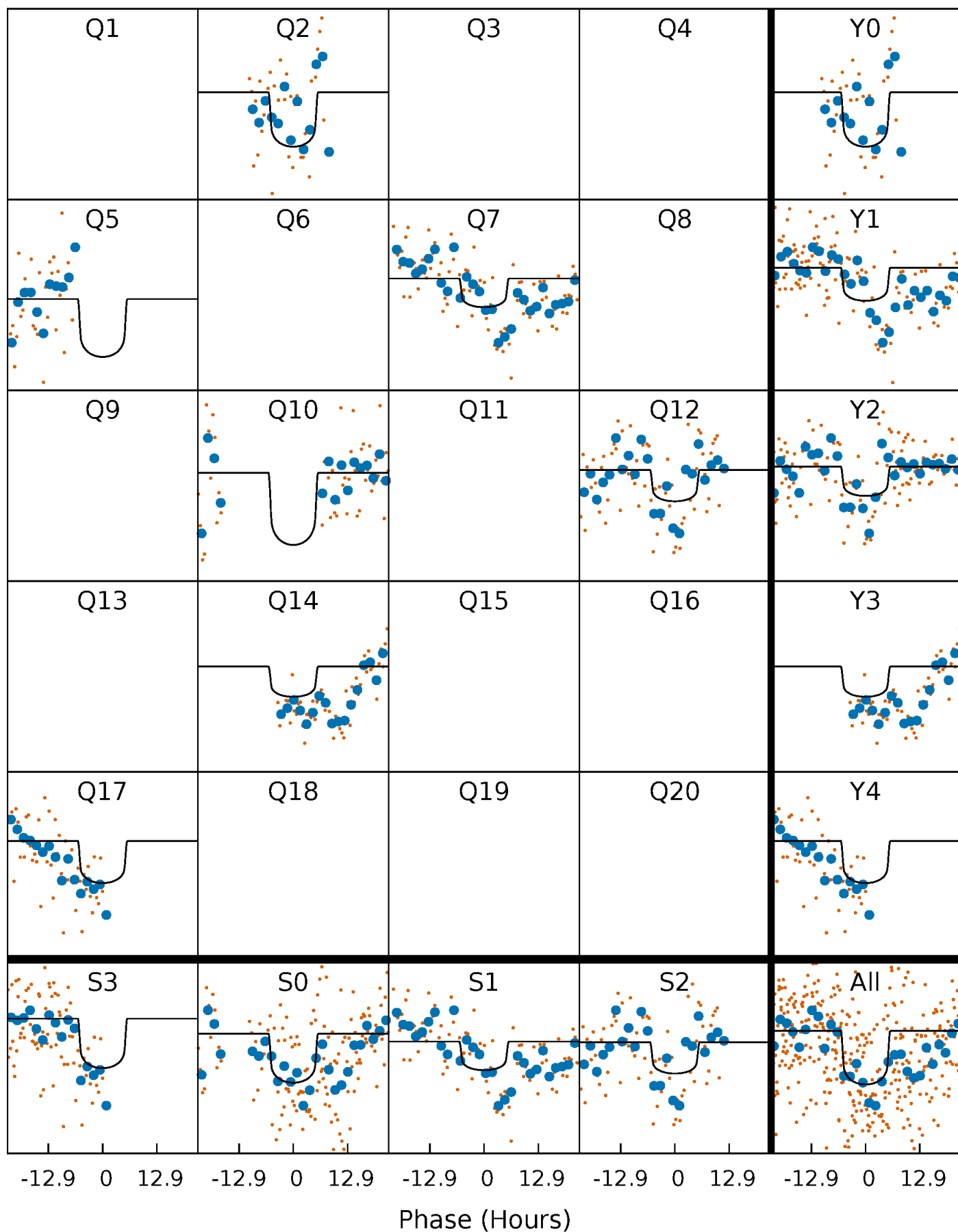
PDC Quarter-Phased Transit Curves

TCE 006048137-03 P=219.421329 Days $T_0=255.059338$ (BKJD)



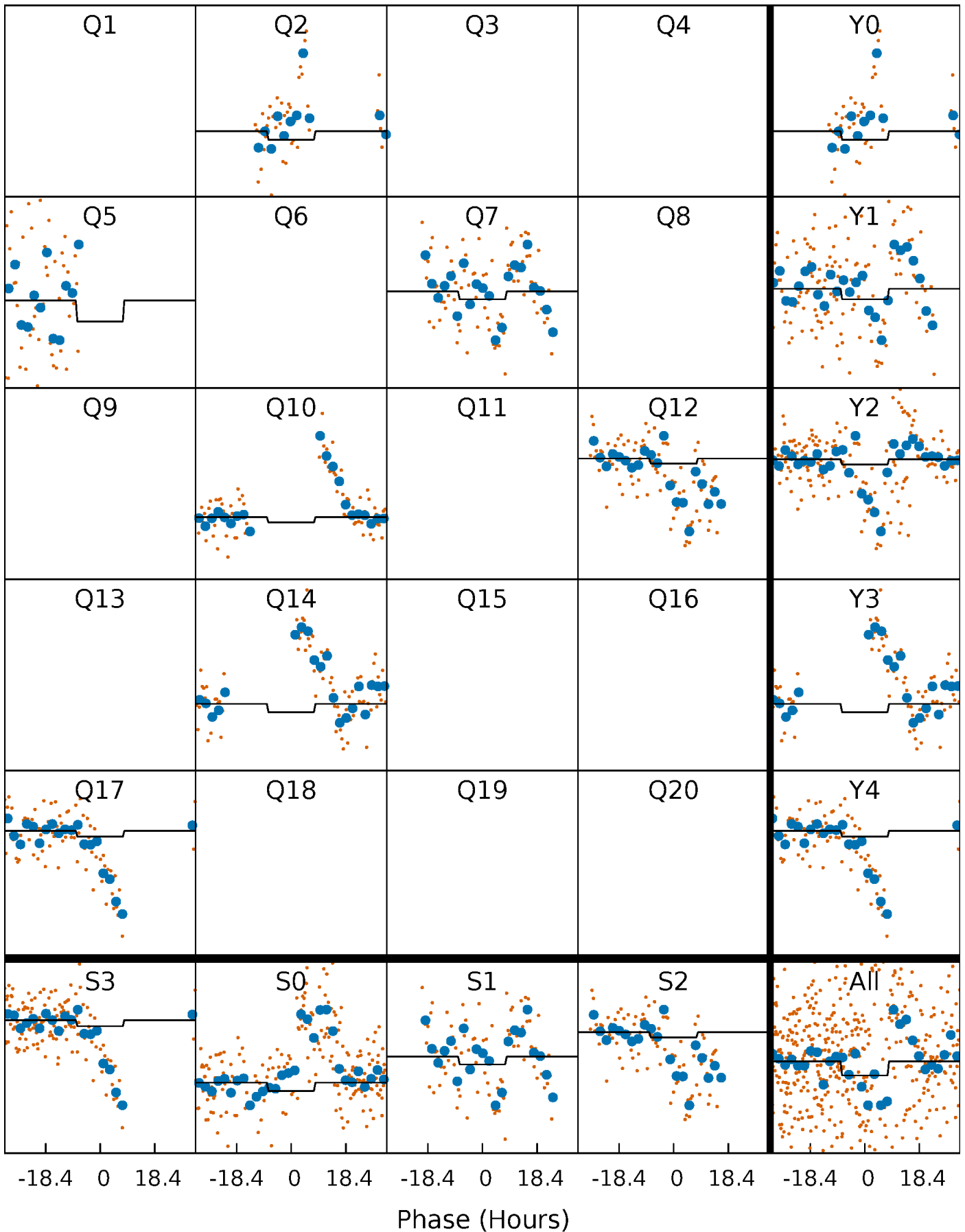
DV Quarter-Phased Transit Curves

TCE 006048137-03 $P=219.421329$ Days $T_0=255.059338$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

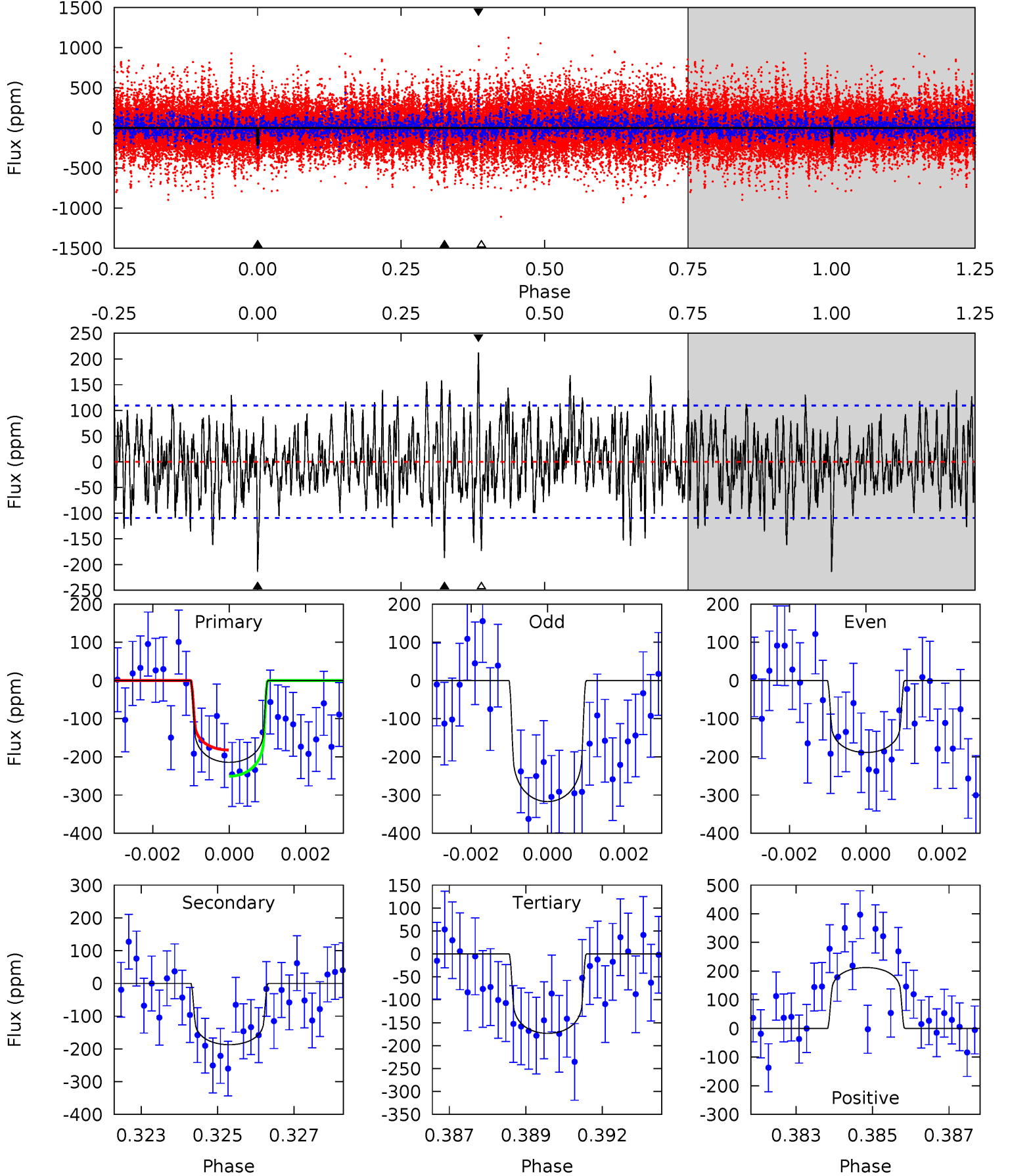
TCE 006048137-03 P=219.361078 Days $T_0=255.129369$ (BKJD)



DV Model-Shift Uniqueness Test

006048137-03, P = 219.421329 Days, E = 35.638009 Days

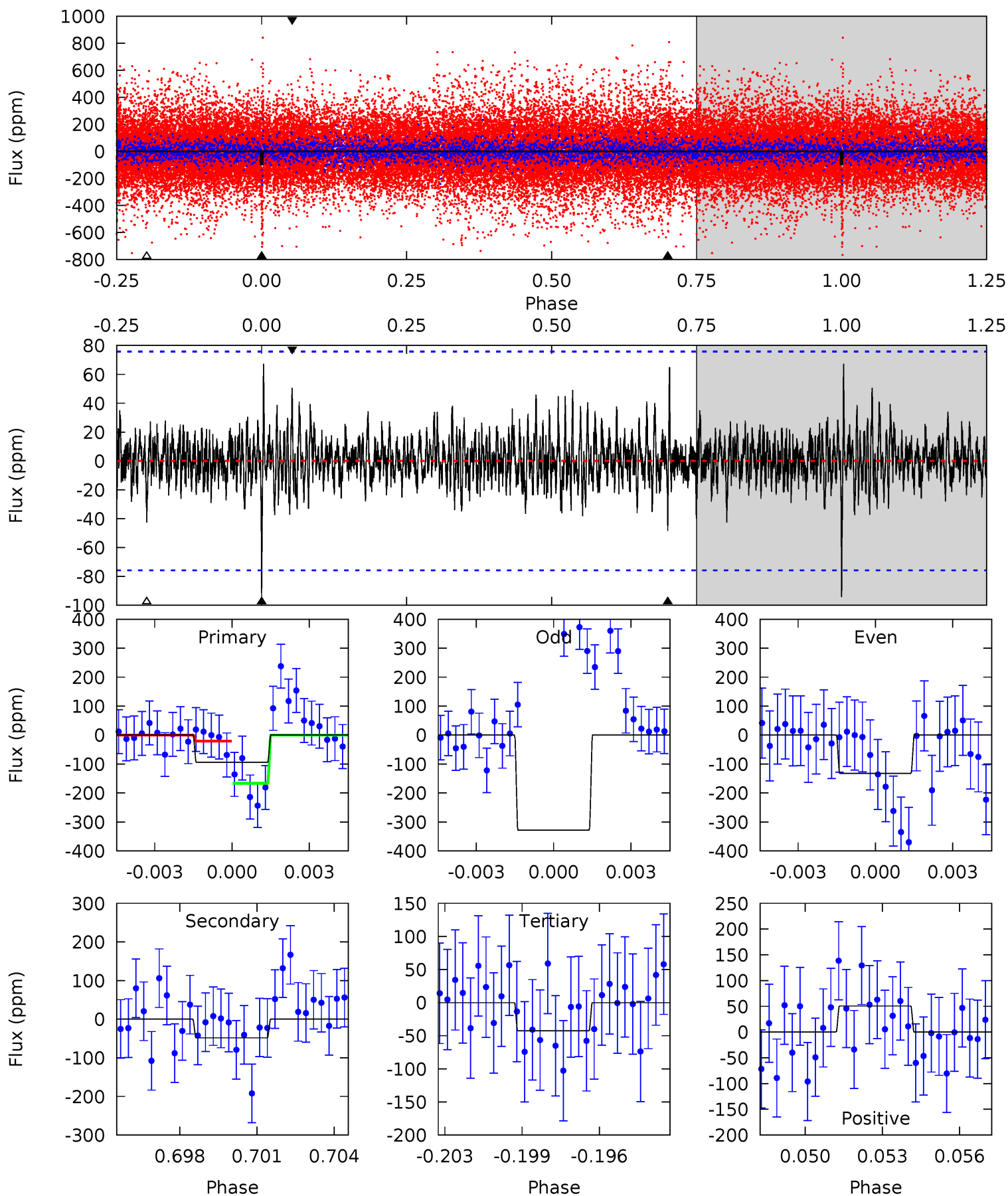
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.4	9.08	8.41	10.3	5.31	3.06	2.70	1.99	0.10	0.67	-1.22	2.60	0.99	0.50	1.67



Alt Model-Shift Uniqueness Test

006048137-03, P = 219.361078 Days, E = 35.768291 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.52	3.35	2.95	3.50	5.25	2.96	0.91	3.57	3.02	0.41	-0.15	4.55	0.90	0.42	5.08



Stellar Parameters For KIC 006048137

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6582^{+189}_{-237}	$4.084^{+0.293}_{-0.158}$	$-0.520^{+0.300}_{-0.300}$	$1.559^{+0.423}_{-0.517}$	$1.075^{+0.164}_{-0.135}$	$0.400^{+0.764}_{-0.176}$
	+3%/-4%	+7%/-4%	+58%/-58%	+27%/-33%	+15%/-13%	+191%/-44%
Source	PHO54	PHO54	PHO54	DSEP		

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

Secondary Eclipse Parameters for KIC 006048137-03 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-187 ± 21	$2.27^{+1.07}_{-0.94}$	583^{+48}_{-51}	6488^{+2362}_{-1010}	10664^{+22019}_{-5647}
Alt.	-48 ± 14	$1.19^{+0.91}_{-0.74}$	584^{+49}_{-57}	6419^{+5482}_{-1537}	10292^{+59237}_{-7297}

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

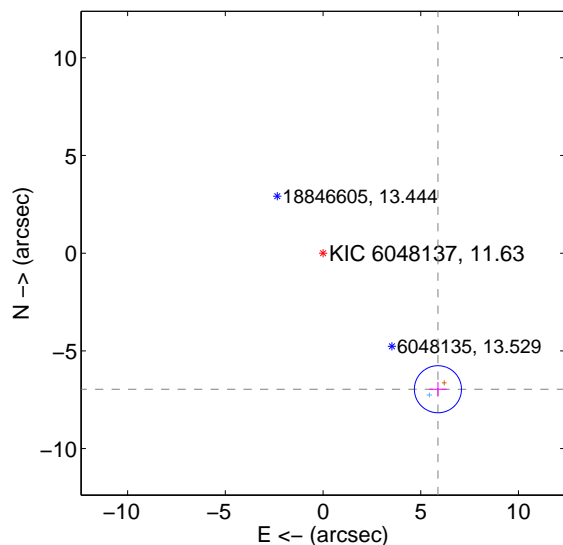
Supplemental centroid analysis for 006048137-03. **Kepler magnitude: 11.63.** Transit SNR 5.76

There are 1 quarters with good PRF difference image offsets

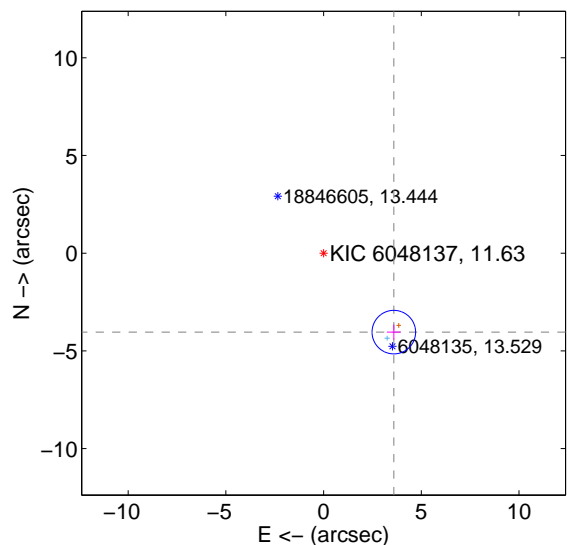
The OOT PRF centroid is offset from the target star catalog position by about 3.64 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	9.115 ± 0.402	22.70	-5.880 ± 0.445	-6.965 ± 0.368
PRF-fit source offset from KIC position	5.409 ± 0.372	14.56	-3.595 ± 0.349	-4.041 ± 0.388
photometric centroid source offset	1.58 ± 1.59	0.99	-0.76 ± 1.32	1.38 ± 1.67

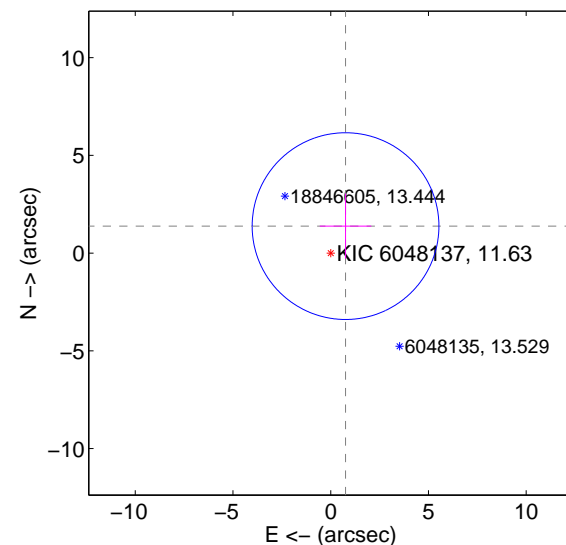
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



offset from photometric centroids

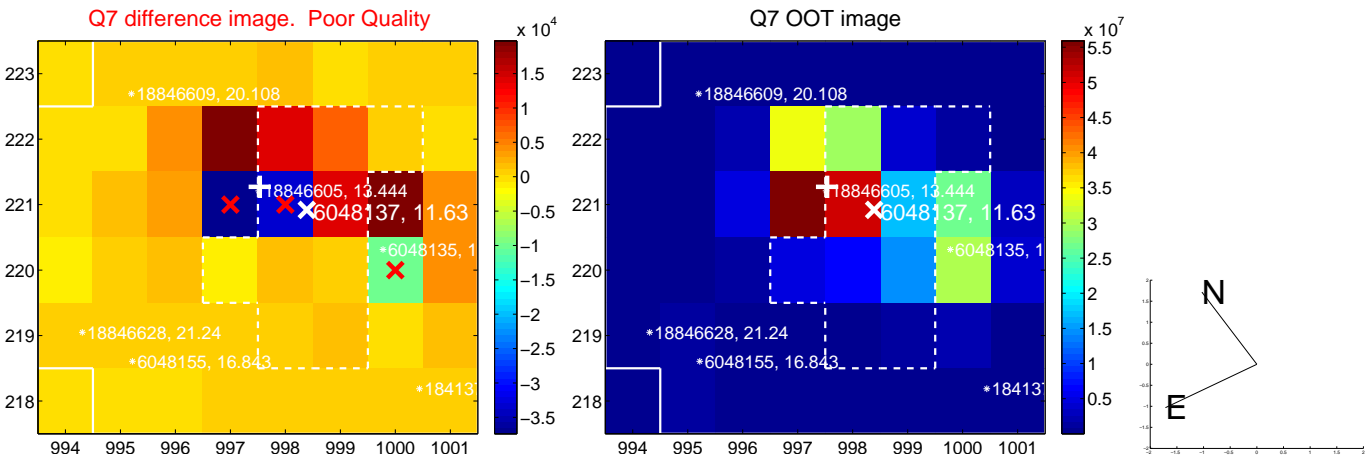


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

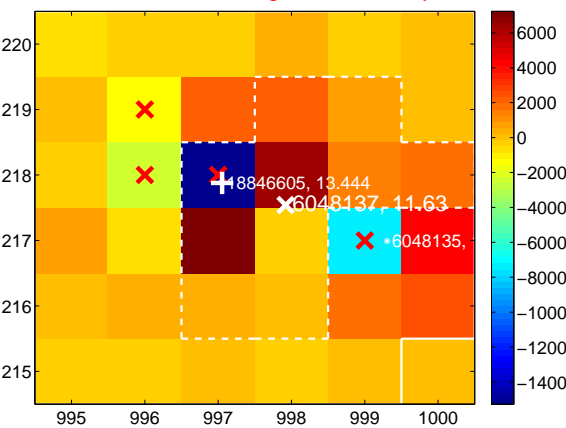
Q9 no difference image



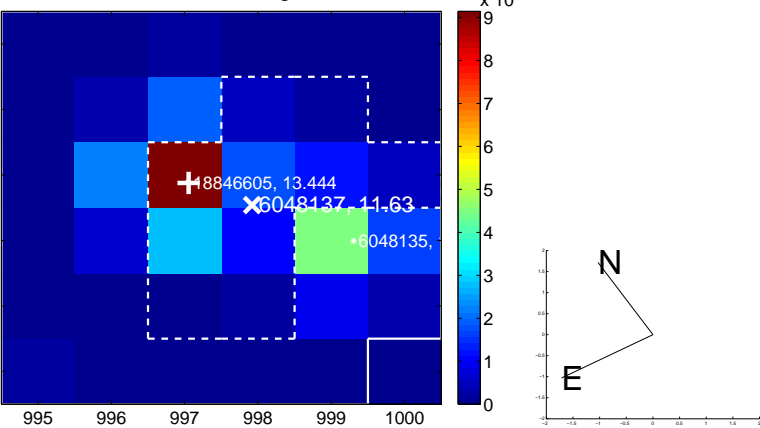
Q9 no OOT image



Q10 difference image. Poor Quality



Q10 OOT image



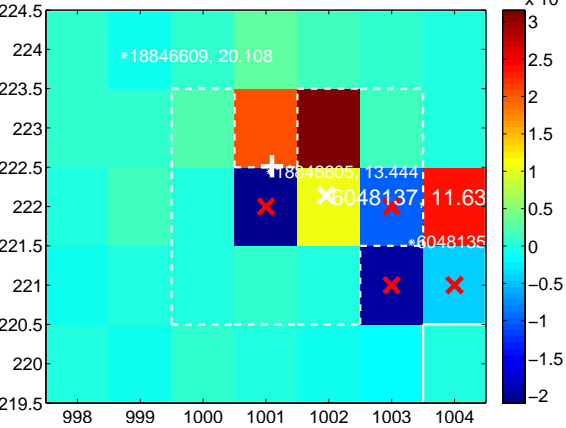
Q11 no difference image



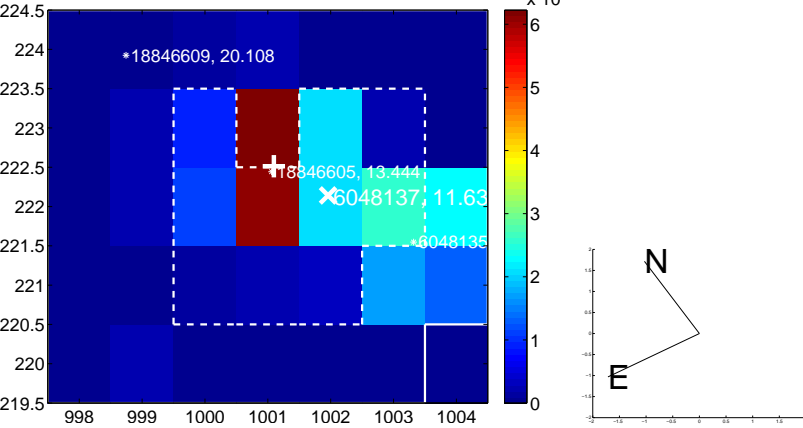
Q11 no OOT image



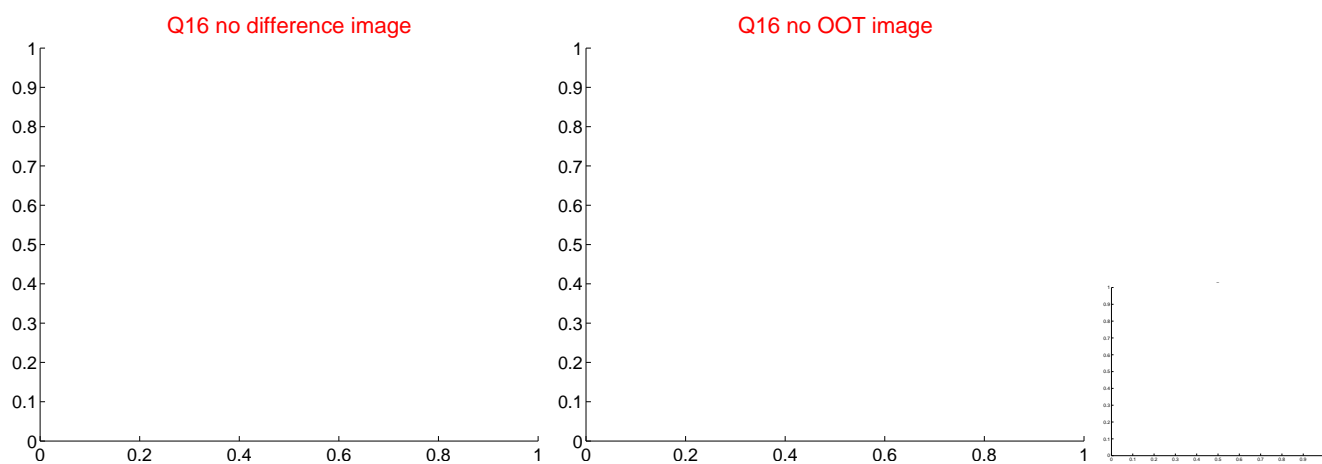
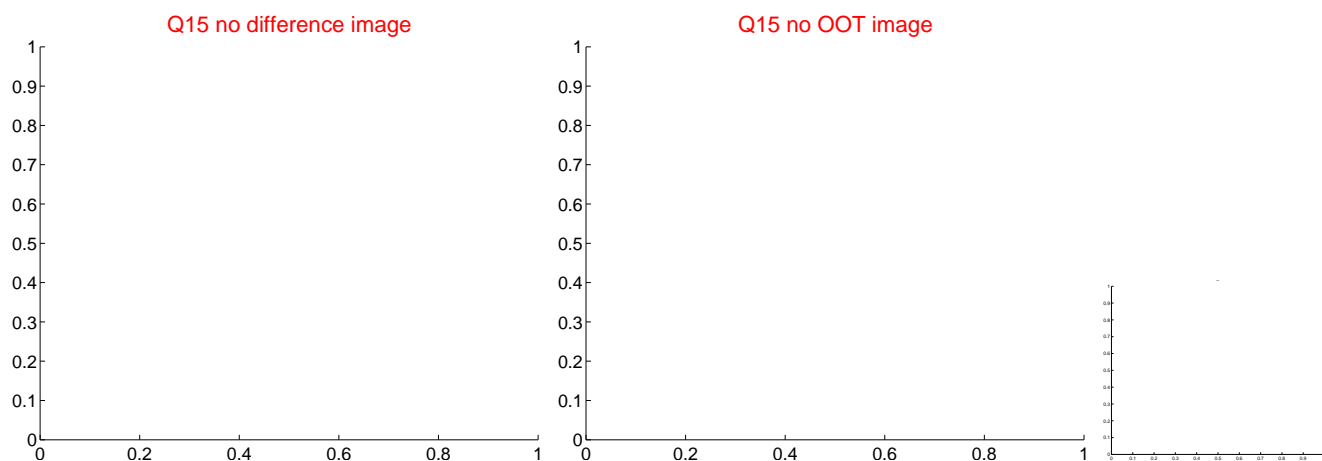
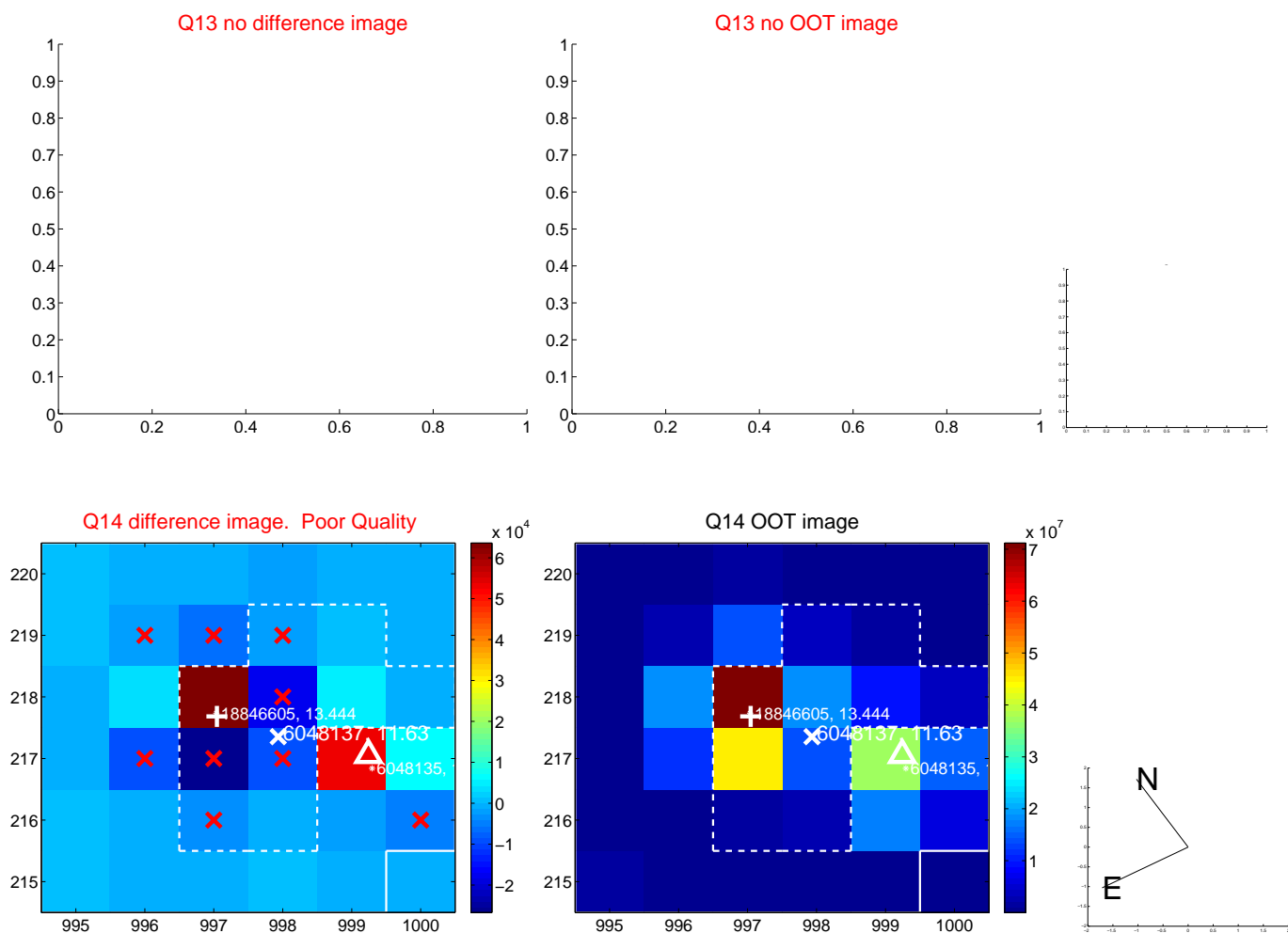
Q12 difference image. Poor Quality



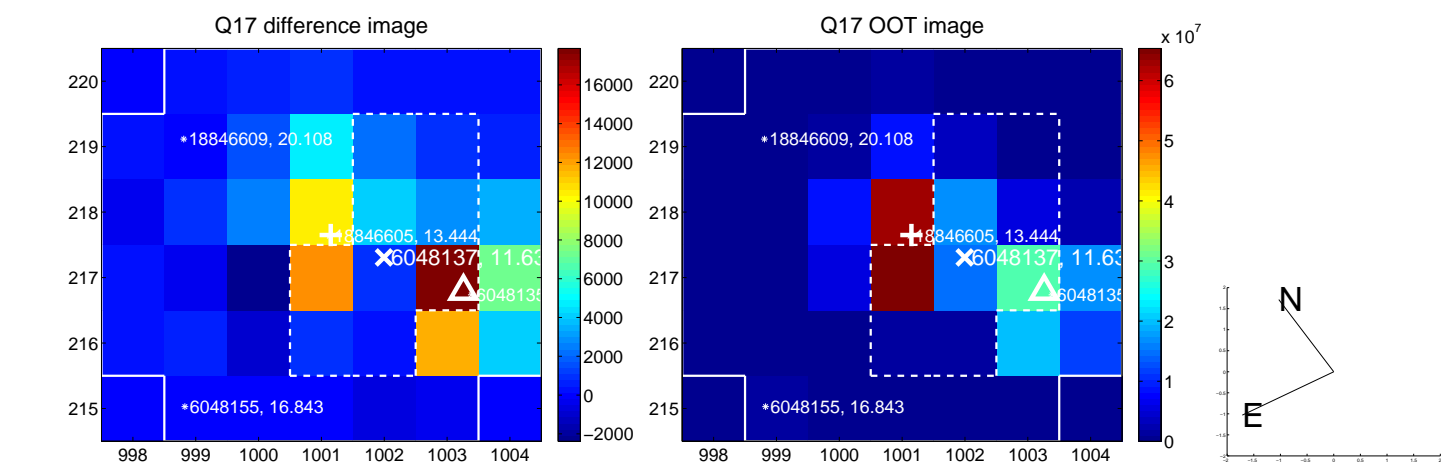
Q12 OOT image



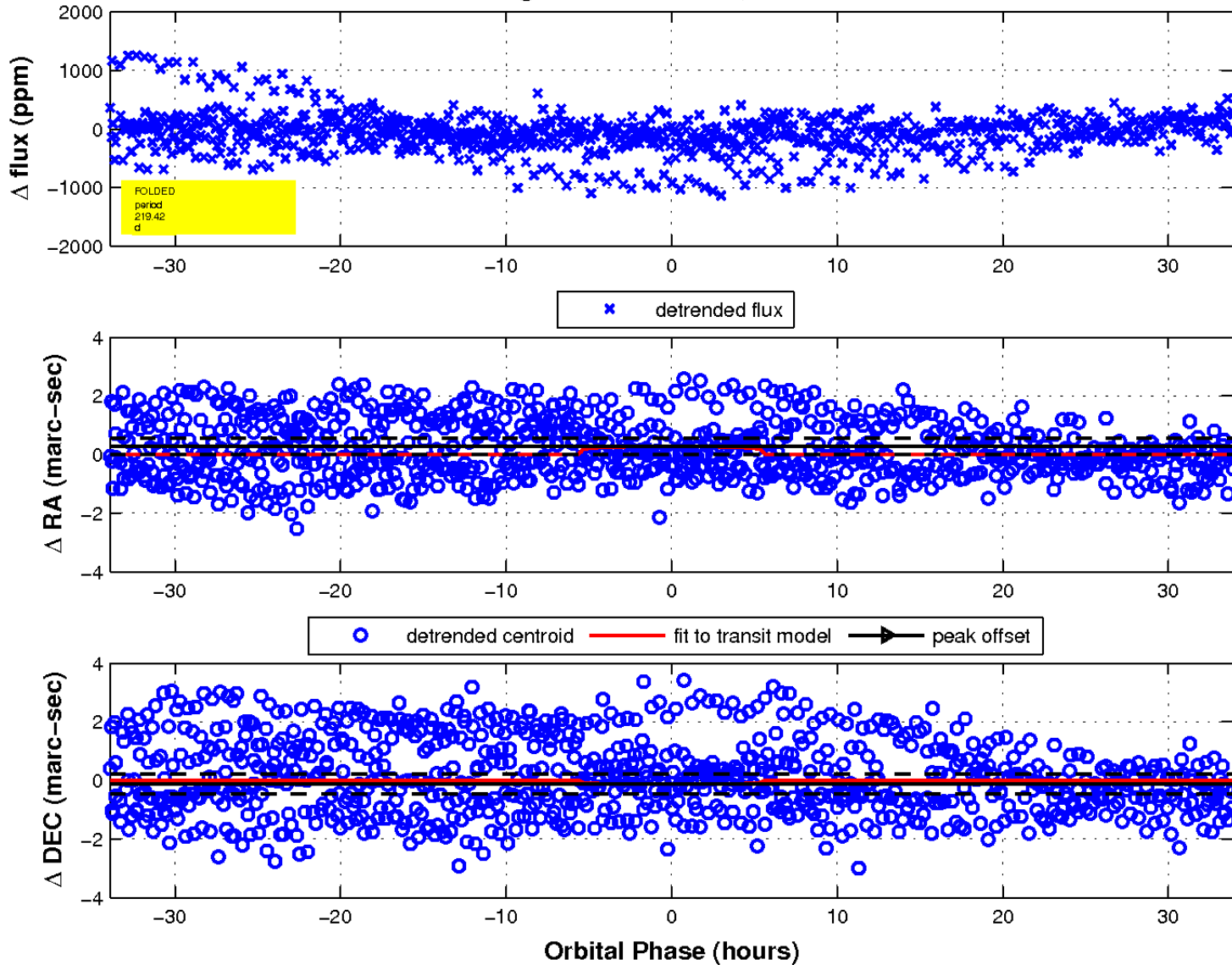
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

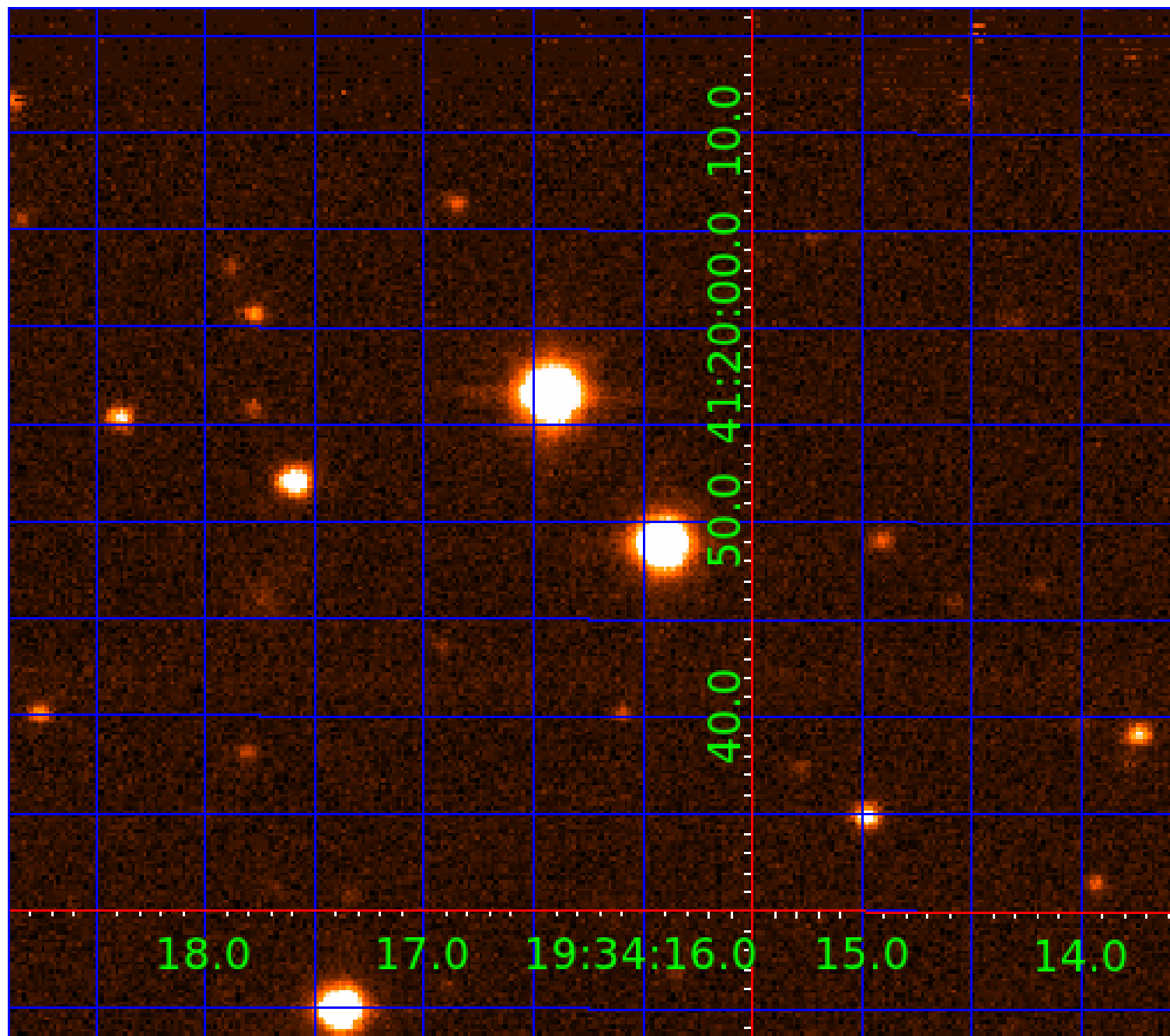


fluxWeightedCentroids, Planet 3 of 4



UKIRT Image

Declination



KIC 006048137

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})
006048137-01	OBS	No	2.828329	132.489678	39.5	7.830	7.8	10.1	1.56	6582	1.14	2540.09
006048137-03	OBS	No	219.421329	255.059338	200.1	11.331	13.8	5.8	1.56	6582	2.39	7.68
006048137-04	OBS	No	2.829162	134.270096	36.5	24.242	8.4	8.4	1.56	6582	1.13	2539.10

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006048137-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_KIC_POS
006048137-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006048137-04	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_ZUMA—SWEET_NTL—LPP_DV—LPP_ALT—SAME_NTL_PERIOD—CENT_KIC_POS—HALO_GHOST

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

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

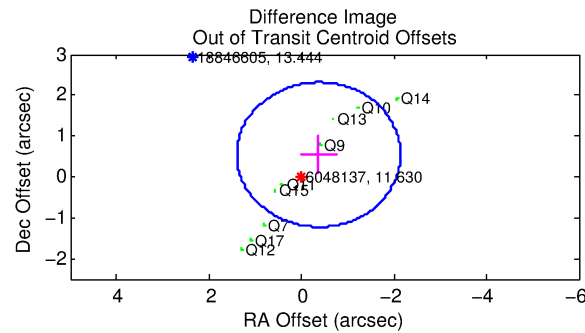
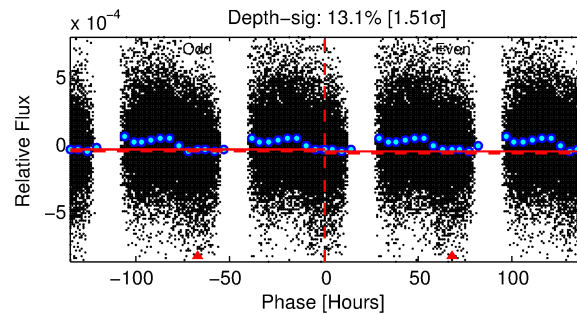
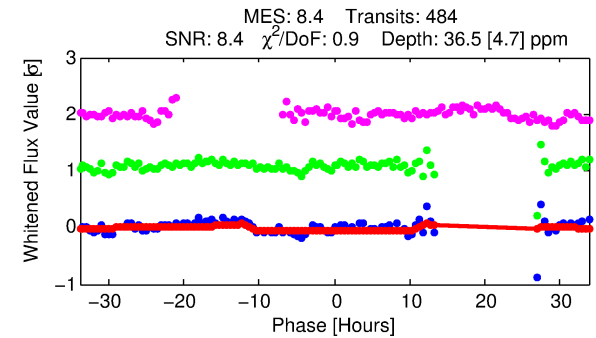
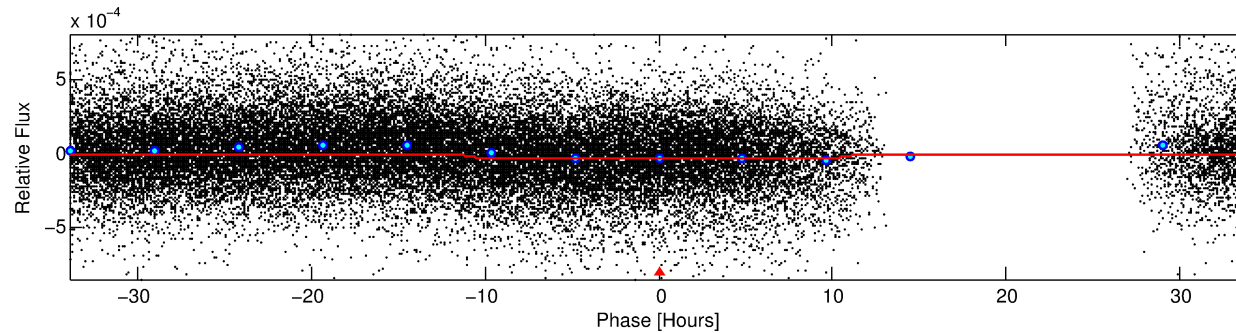
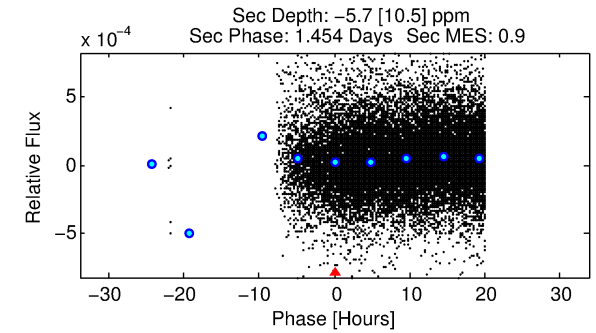
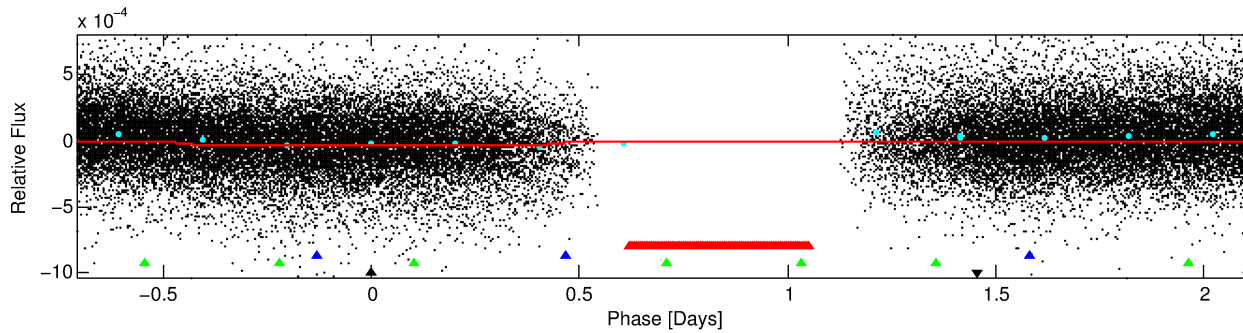
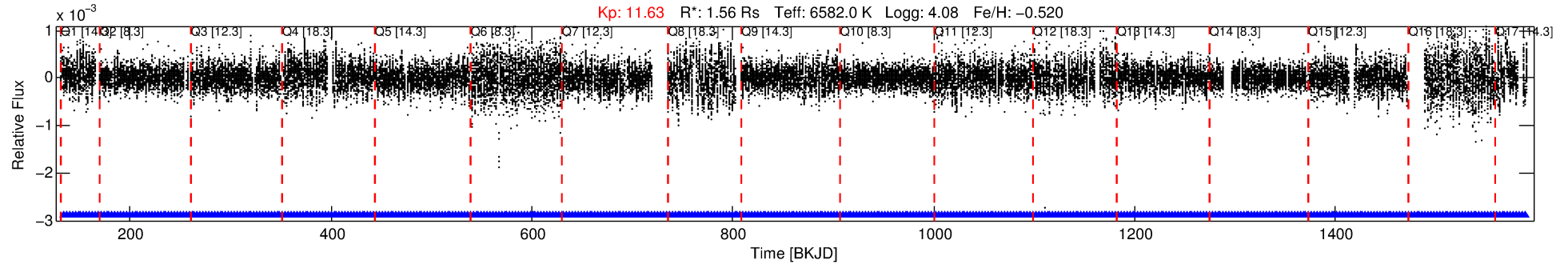
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006048137-04

No Significant Match Found

DV One-Page Summary

KIC: 6048137 Candidate: 4 of 4 Period: 2.829 d



DV Fit Results:

Period = 2.82916 [0.00008] d
Epoch = 134.2701 [0.0195] BKJD
 $R_p/R^* = 0.0066 [0.0006]$
 $a/R^* = 1.02 [0.02]$
 $b = 0.93 [0.06]$
 $S_{\text{eff}} = 2539.10 [1324.03]$
 $T_{\text{eq}} = 1810 [236] \text{ K}$
 $R_p = 1.13 [0.39] R_{\text{e}}$
 $a = 0.0401 [0.0127] \text{ AU}$
 $A_g = \text{N/A}$
 $T_{\text{effp}} = \text{N/A}$

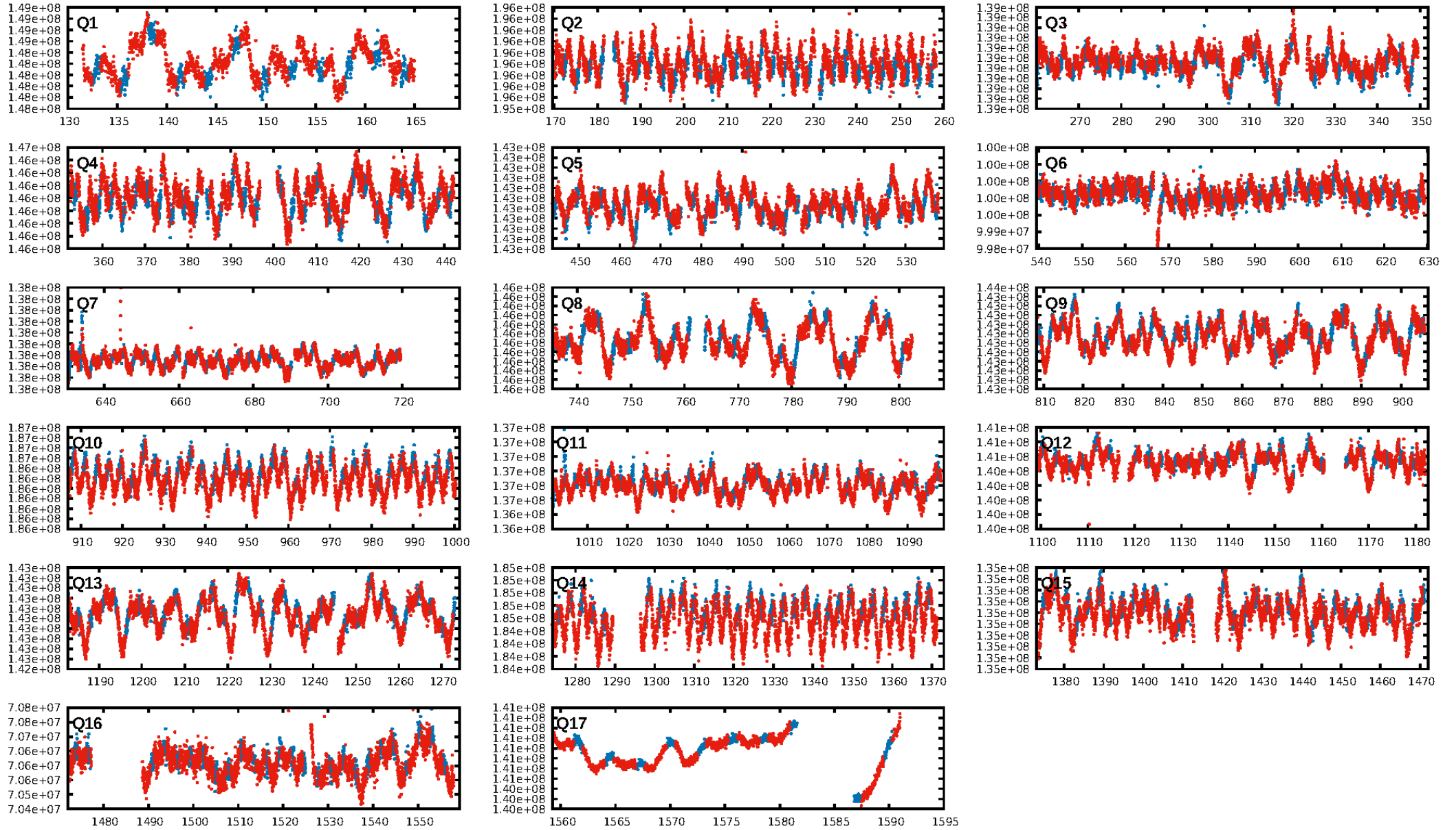
DV Diagnostic Results:

ShortPeriod-sig: $0.1\% [0.00\sigma]$
LongPeriod-sig: $100.0\% [194.25\sigma]$
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [462/462]
GhostDiagnostic-chr: -0.04827
Centroid-sig: 0.0%
Centroid-so: $9.571 \text{ arcsec} [7.77\sigma]$
OotOffset-rm: $0.658 \text{ arcsec} [1.11\sigma]$
KicOffset-rm: $3.968 \text{ arcsec} [7.49\sigma]$
OotOffset-st: 2/3/1/3 [9]
KicOffset-st: 2/3/1/3 [9]
DiffImageQuality-fgm: 1.00 [9/9]
DiffImageOverlap-fno: 0.00 [0/17]

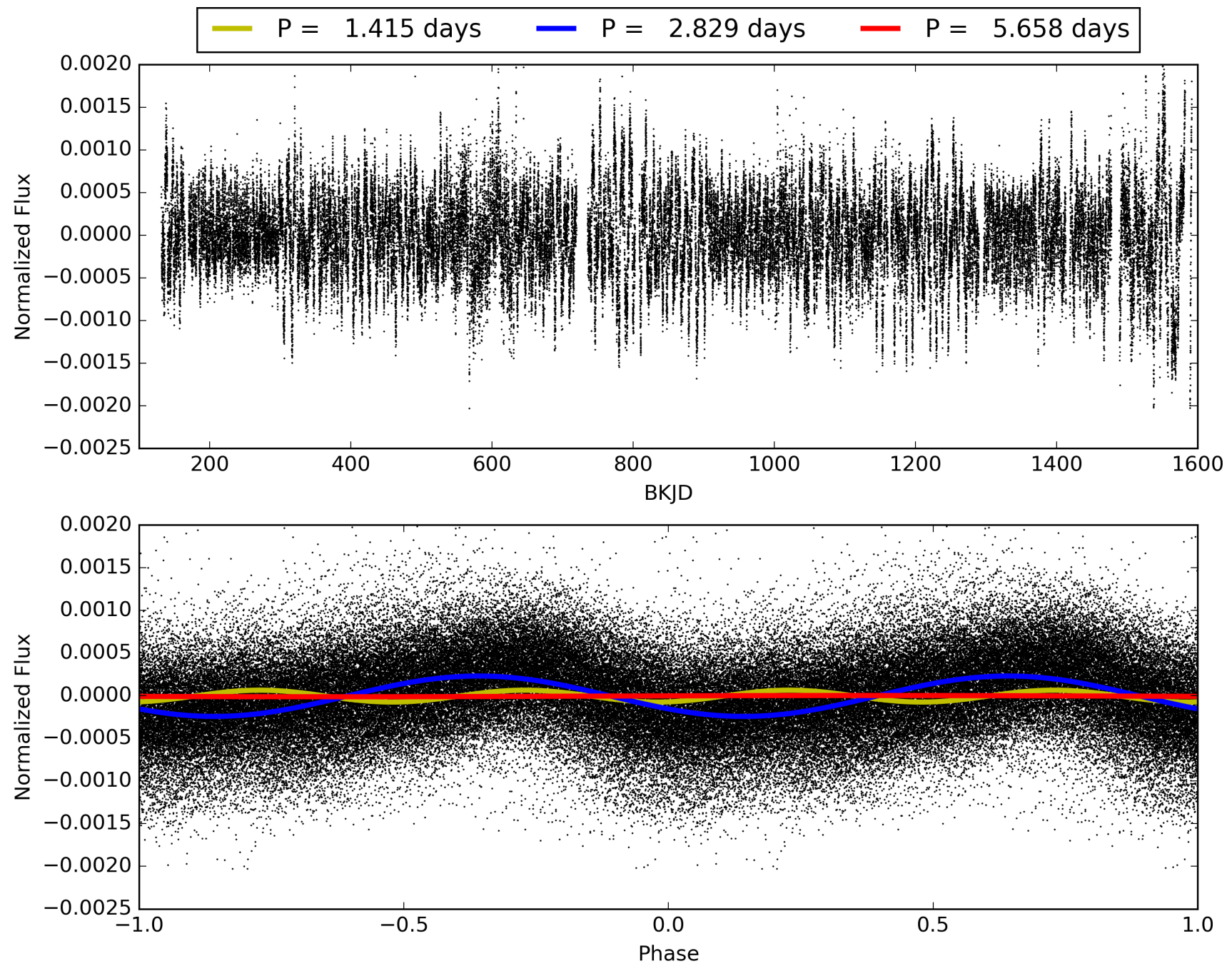
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 04:06:03 Z

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

TCE 006048137-04, PDC Light Curves

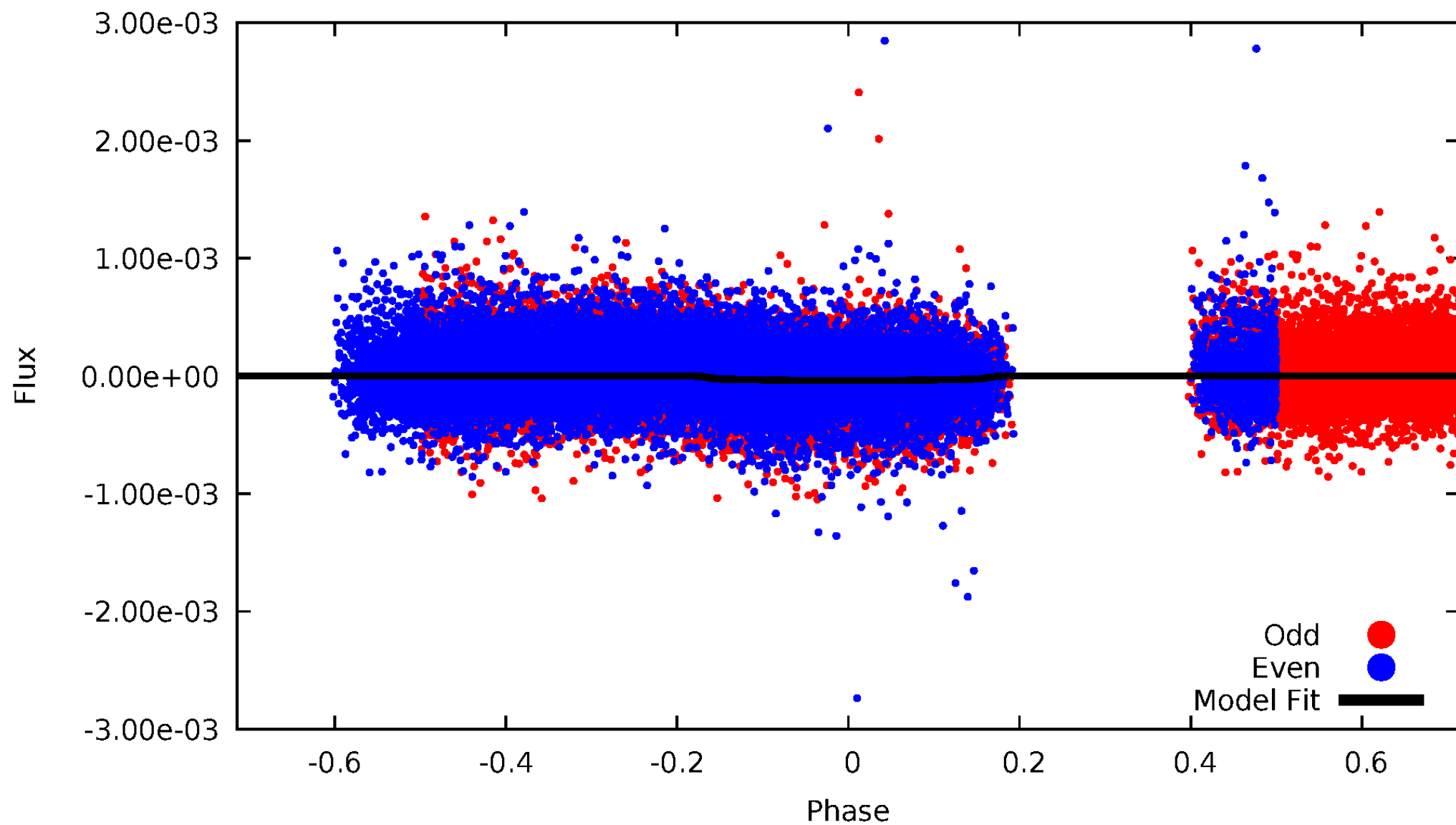


TCE 006048137-04



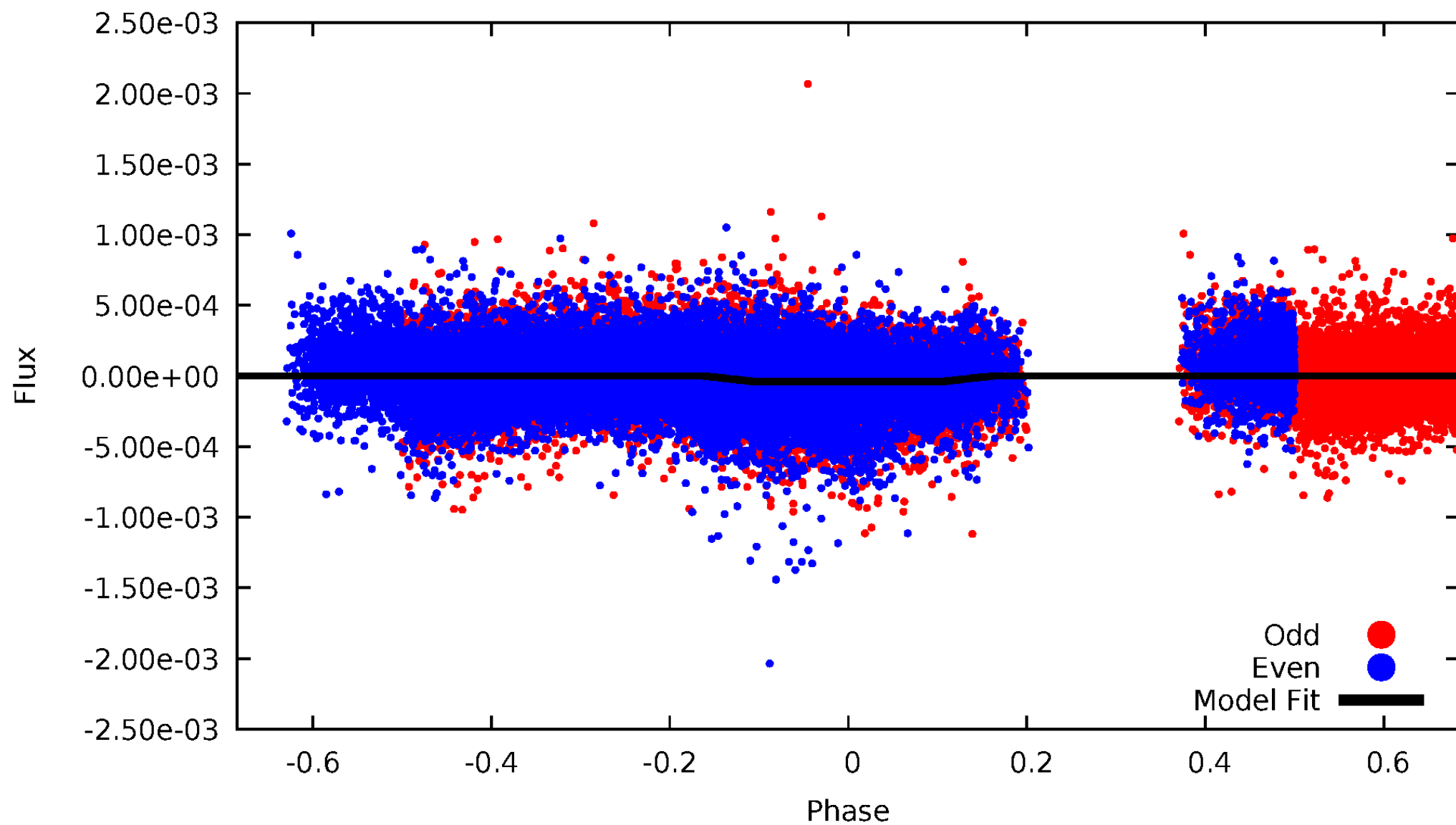
DV Odd/Even

TCE 006048137-04



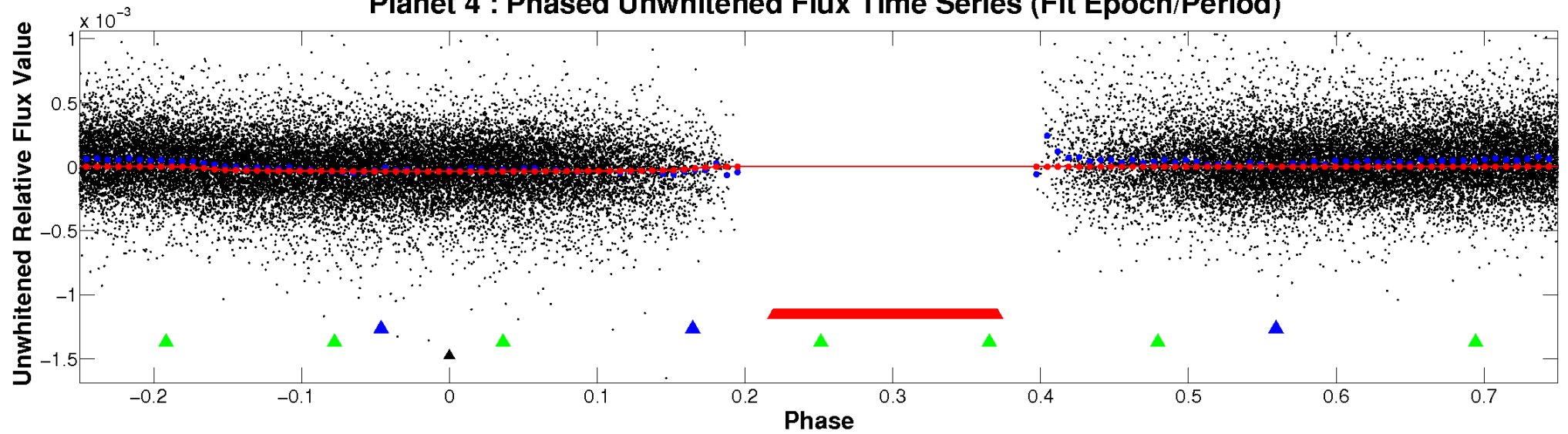
ALT Odd/Even

TCE 006048137-04

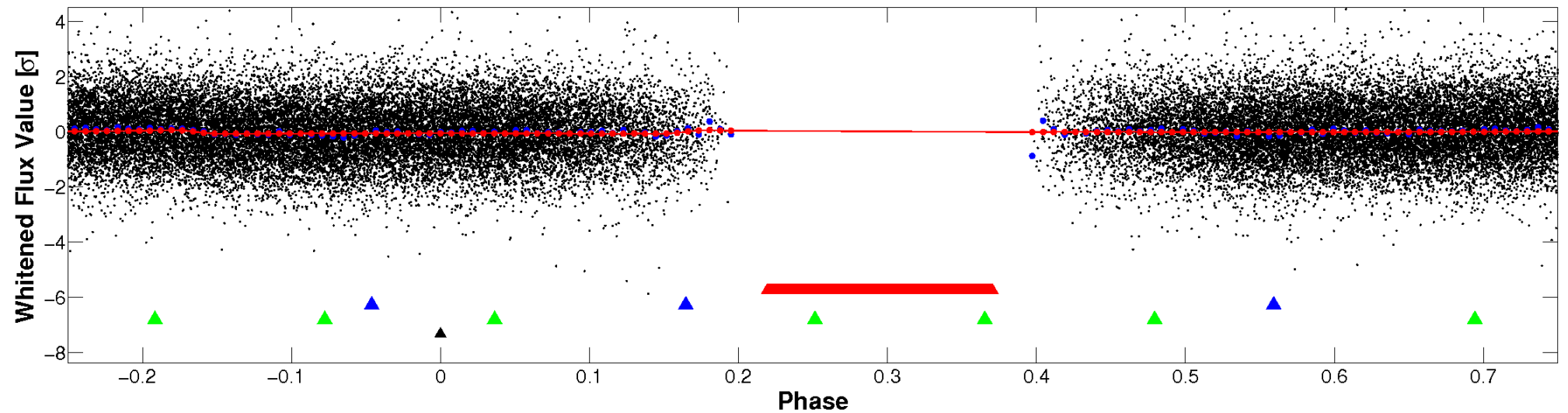


Non-Whitened Vs. Whitened Light Curve

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

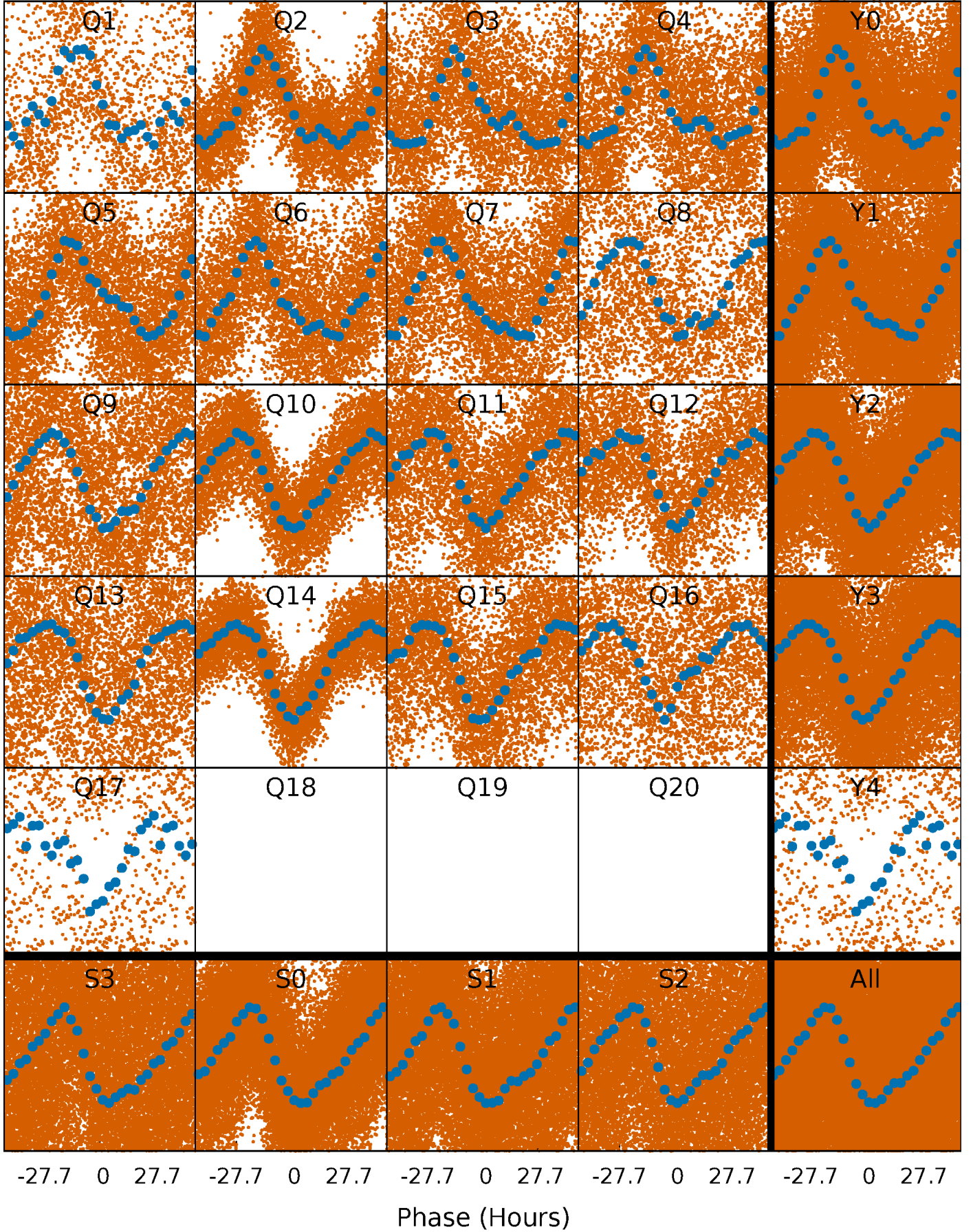


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



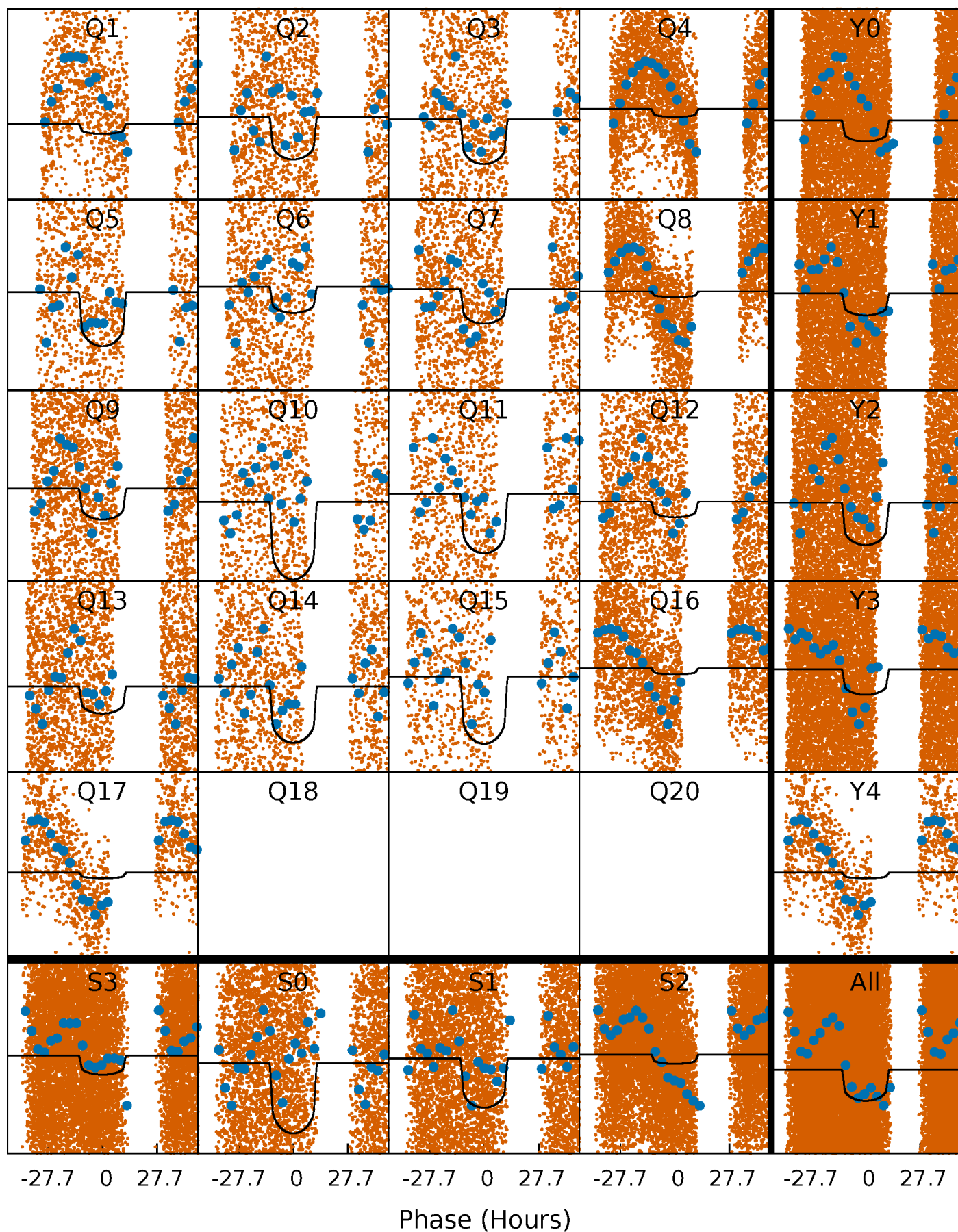
PDC Quarter-Phased Transit Curves

TCE 006048137-04 P= 2.829162 Days $T_0=134.270096$ (BKJD)



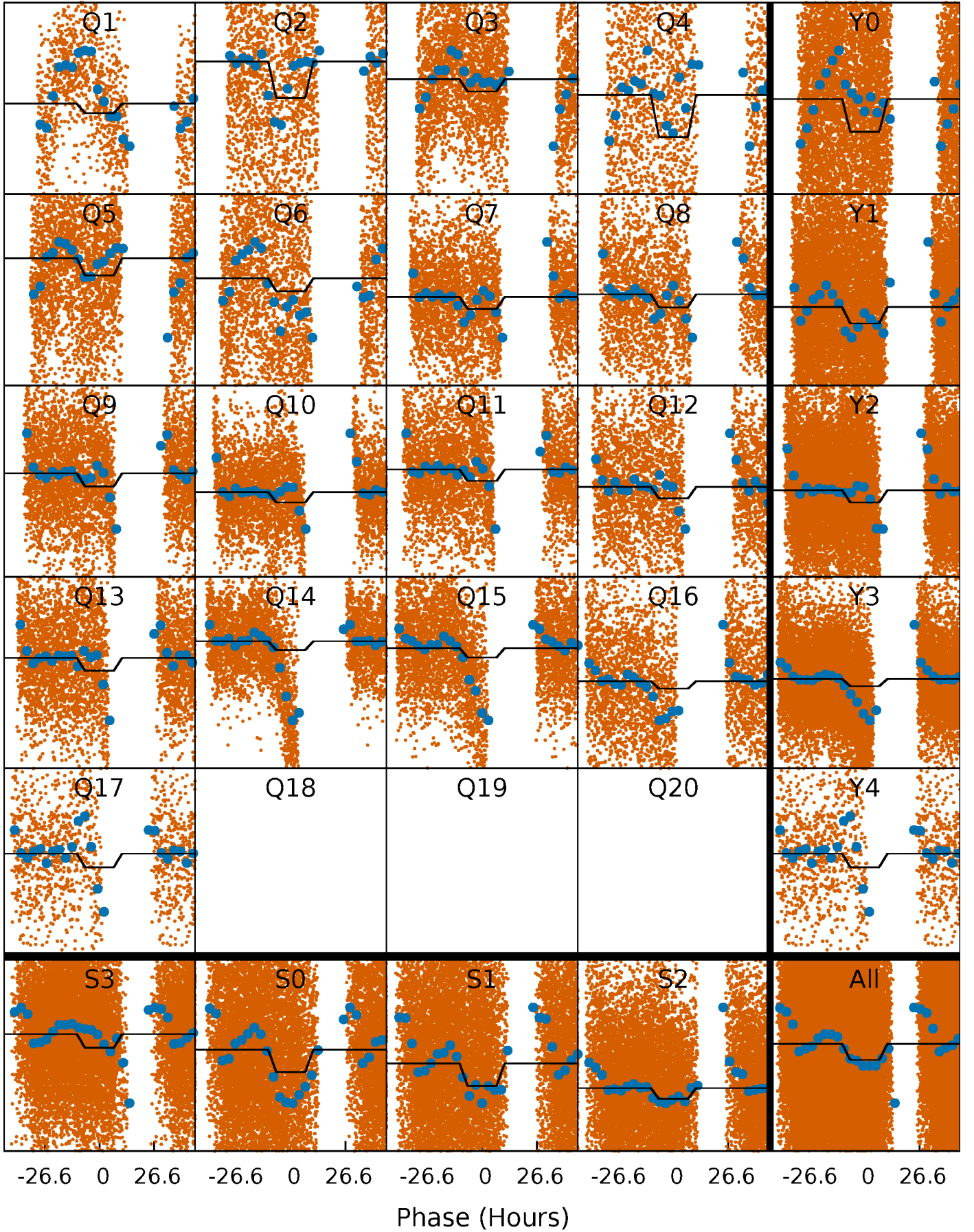
DV Quarter-Phased Transit Curves

TCE 006048137-04 P= 2.829162 Days $T_0=134.270096$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

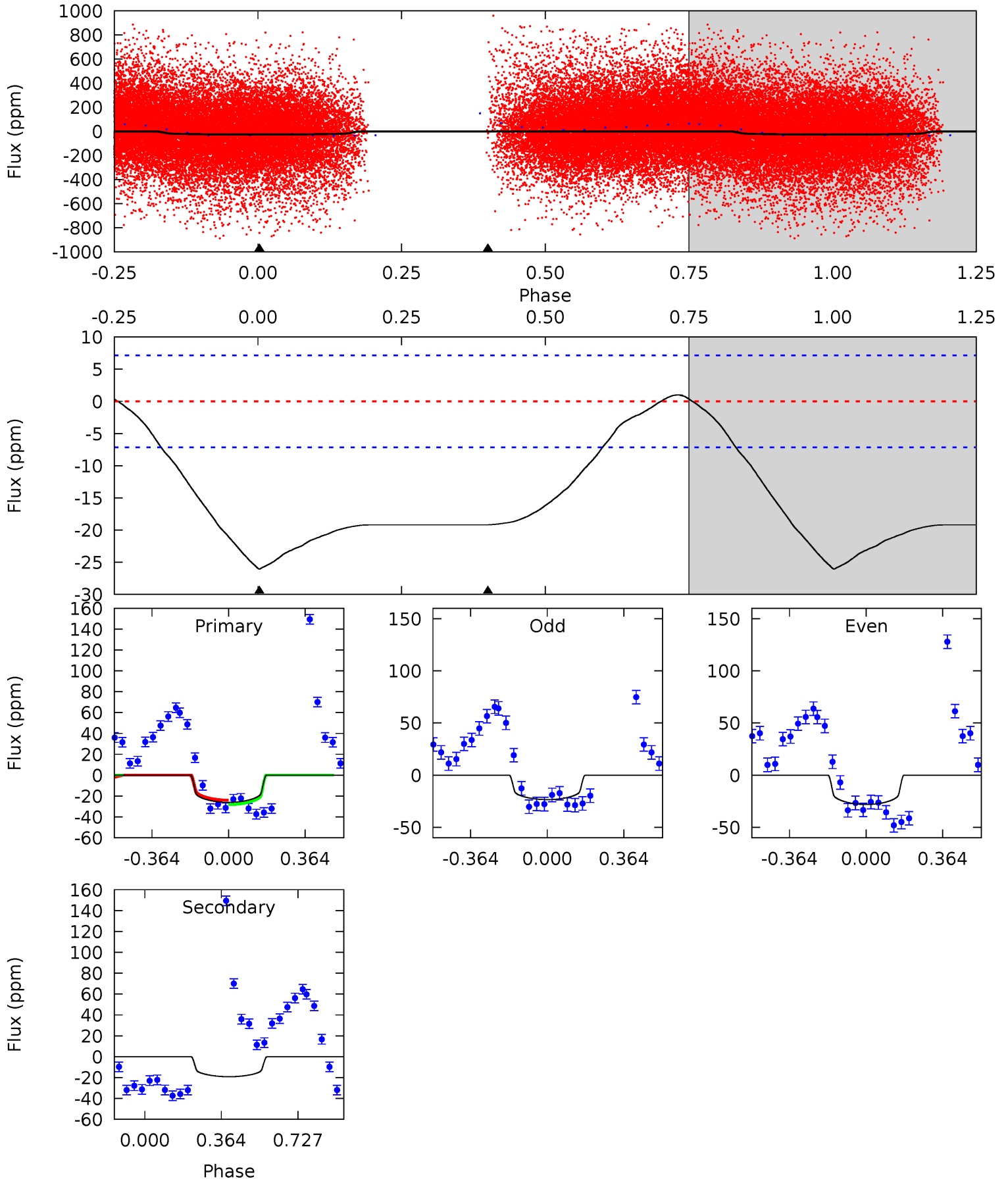
TCE 006048137-04 P= 2.829366 Days $T_0=134.243861$ (BKJD)



DV Model-Shift Uniqueness Test

006048137-04, P = 2.829162 Days, E = 131.440934 Days

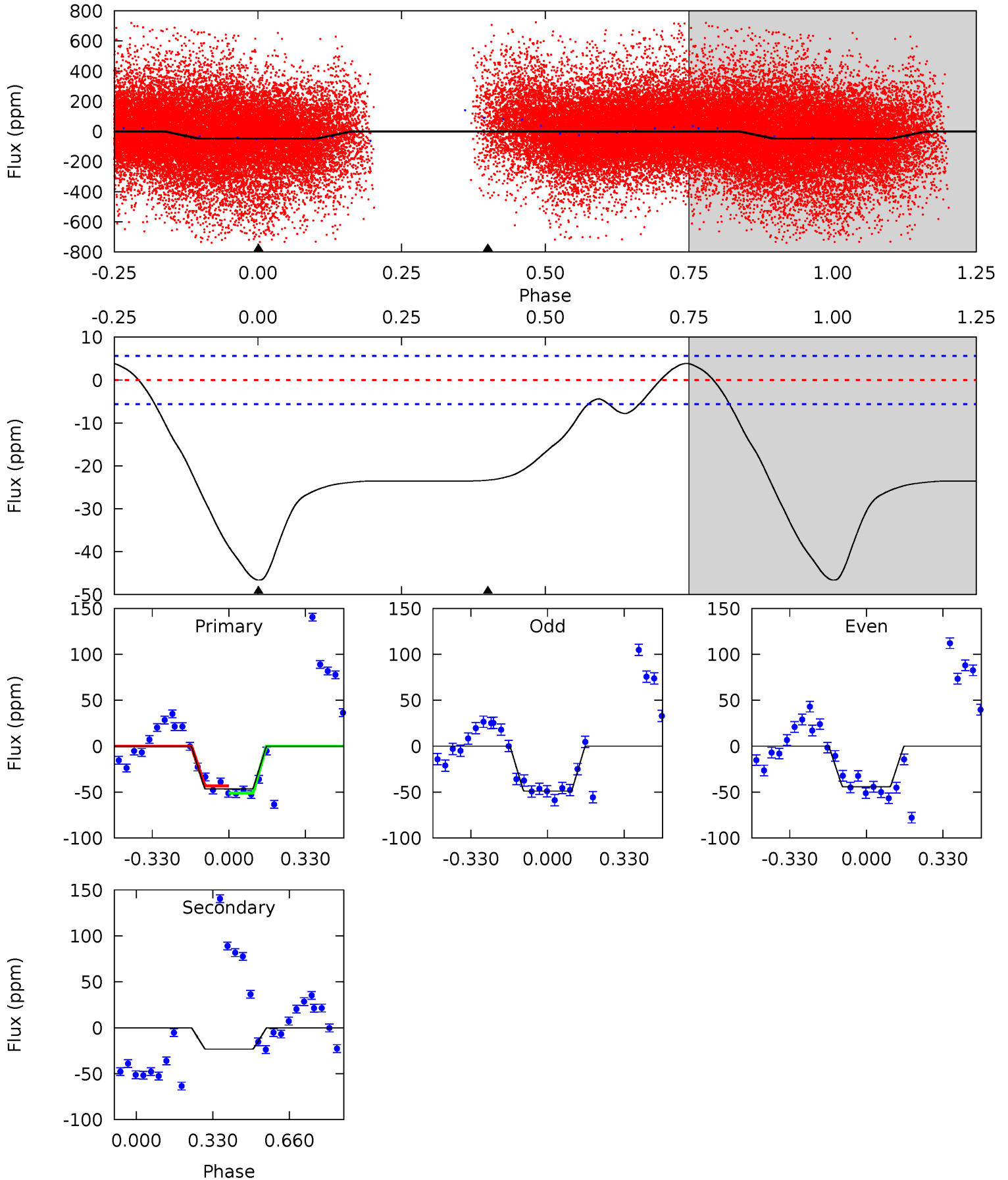
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.6	11.5	0	0	4.29	0.91	0.53	15.6	15.6	11.5	11.5	1.41	1.75	0.04	1.30



Alt Model-Shift Uniqueness Test

006048137-04, P = 2.829366 Days, E = 131.414495 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
35.8	17.9	0	0	4.31	0.97	1.98	35.8	35.8	17.9	17.9	1.84	2.04	0.08	2.55



Stellar Parameters For KIC 006048137

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6582^{+189}_{-237}	$4.084^{+0.293}_{-0.158}$	$-0.520^{+0.300}_{-0.300}$	$1.559^{+0.423}_{-0.517}$	$1.075^{+0.164}_{-0.135}$	$0.400^{+0.764}_{-0.176}$
	+3%/-4%	+7%/-4%	+58%/-58%	+27%/-33%	+15%/-13%	+191%/-44%
Source	PHO54	PHO54	PHO54	DSEP		

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

Secondary Eclipse Parameters for KIC 006048137-04 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-19 ± 2	$1.11^{+0.21}_{-0.21}$	2498^{+206}_{-228}	5349^{+268}_{-261}	14^{+7}_{-4}
Alt.	-23 ± 1	$1.07^{+0.18}_{-0.22}$	2502^{+182}_{-247}	5700^{+342}_{-294}	19^{+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 $T_{\text{obs}} \gg T_{\text{max}}$ AND $A_{\text{obs}} \gg 1.0$

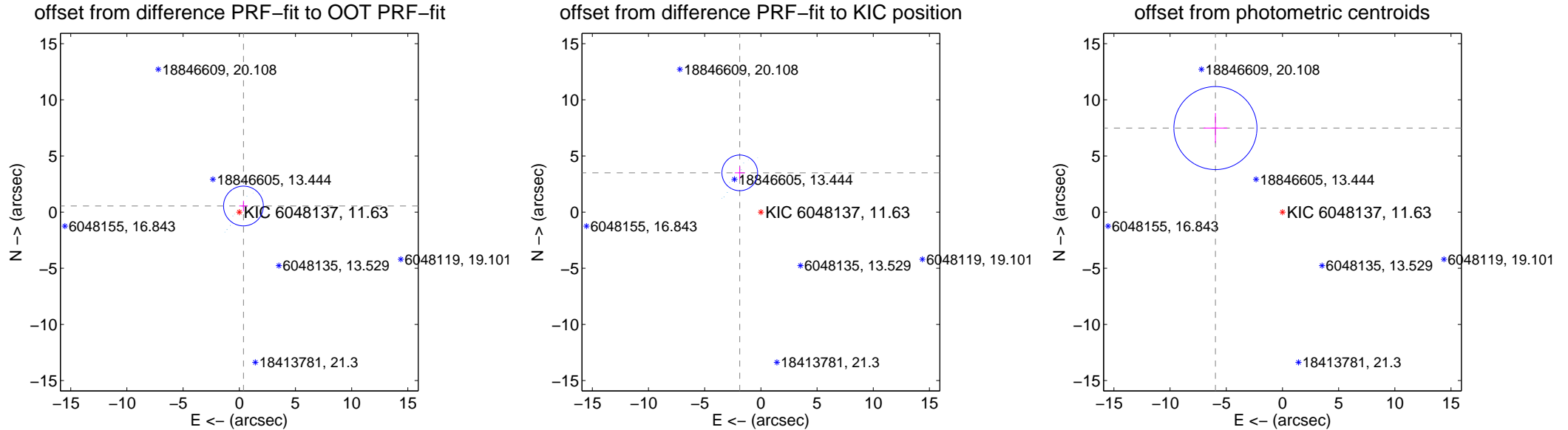
DV Centroid Data

Supplemental centroid analysis for 006048137-04. **Kepler magnitude: 11.63.** Transit SNR 8.36

There are 9 quarters with good PRF difference image offsets

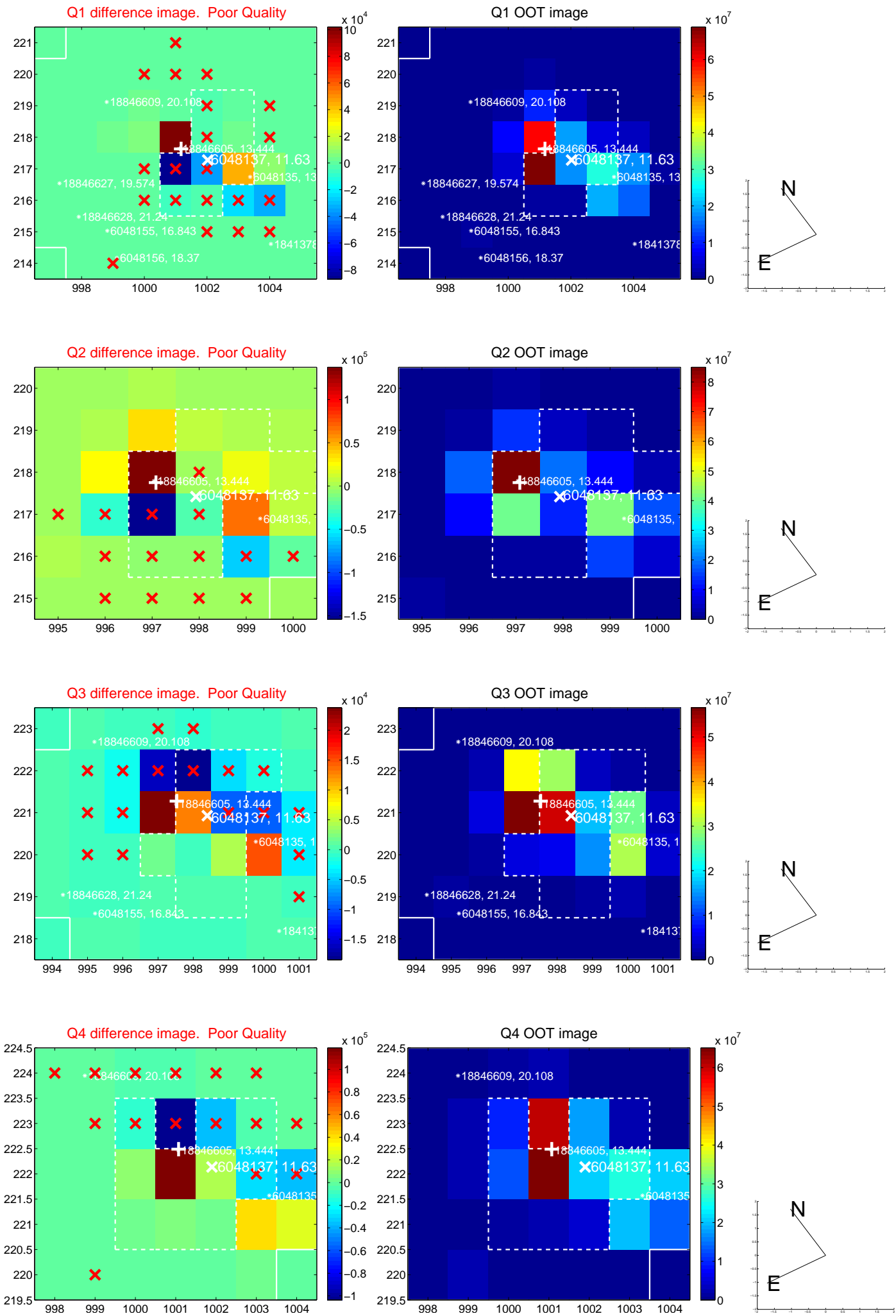
The OOT PRF centroid is offset from the target star catalog position by about 3.64 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.658 ± 0.590	1.11	-0.370 ± 0.380	0.544 ± 0.466
PRF-fit source offset from KIC position	3.968 ± 0.530	7.49	1.878 ± 0.449	3.496 ± 0.551
photometric centroid source offset	9.57 ± 1.23	7.77	5.97 ± 1.05	7.48 ± 1.33

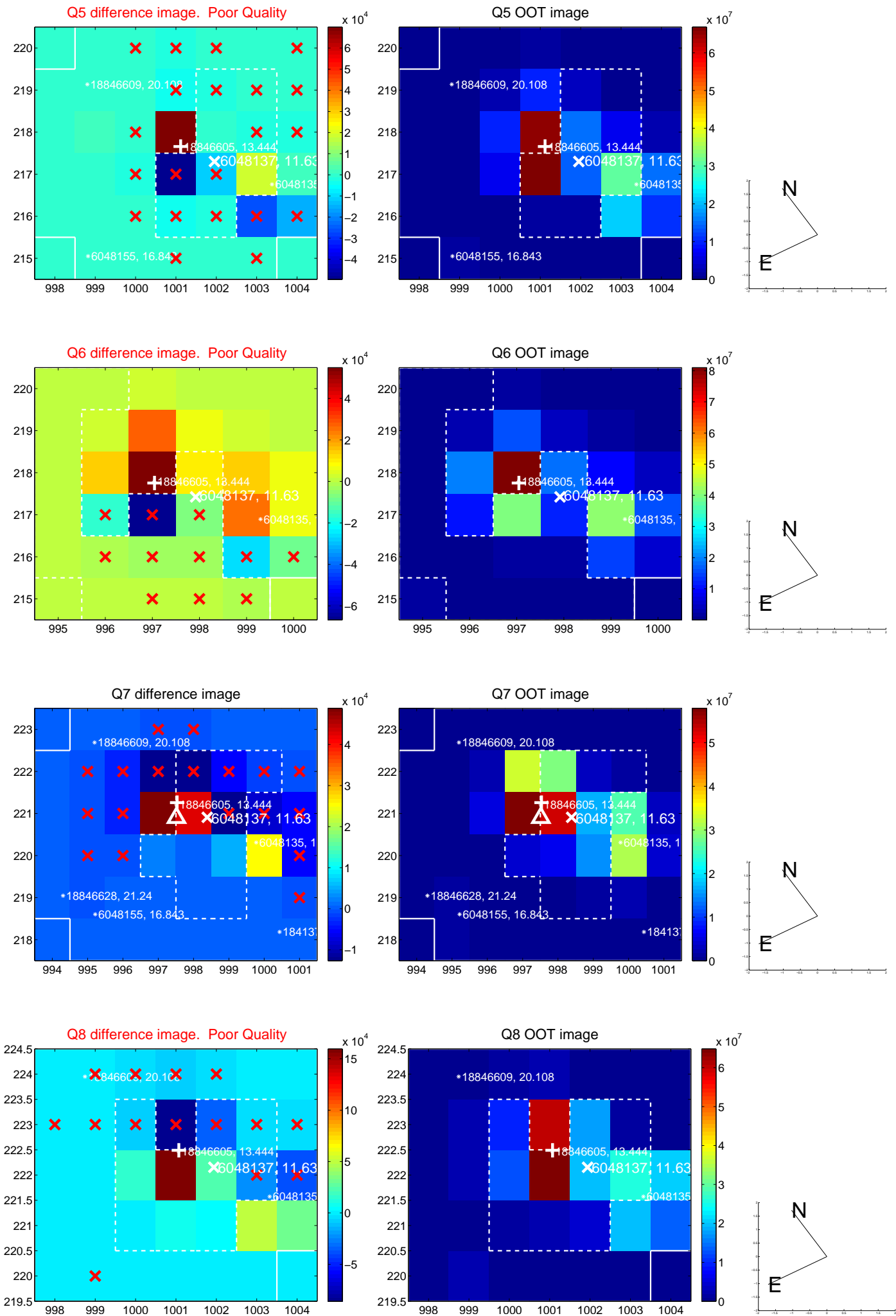


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

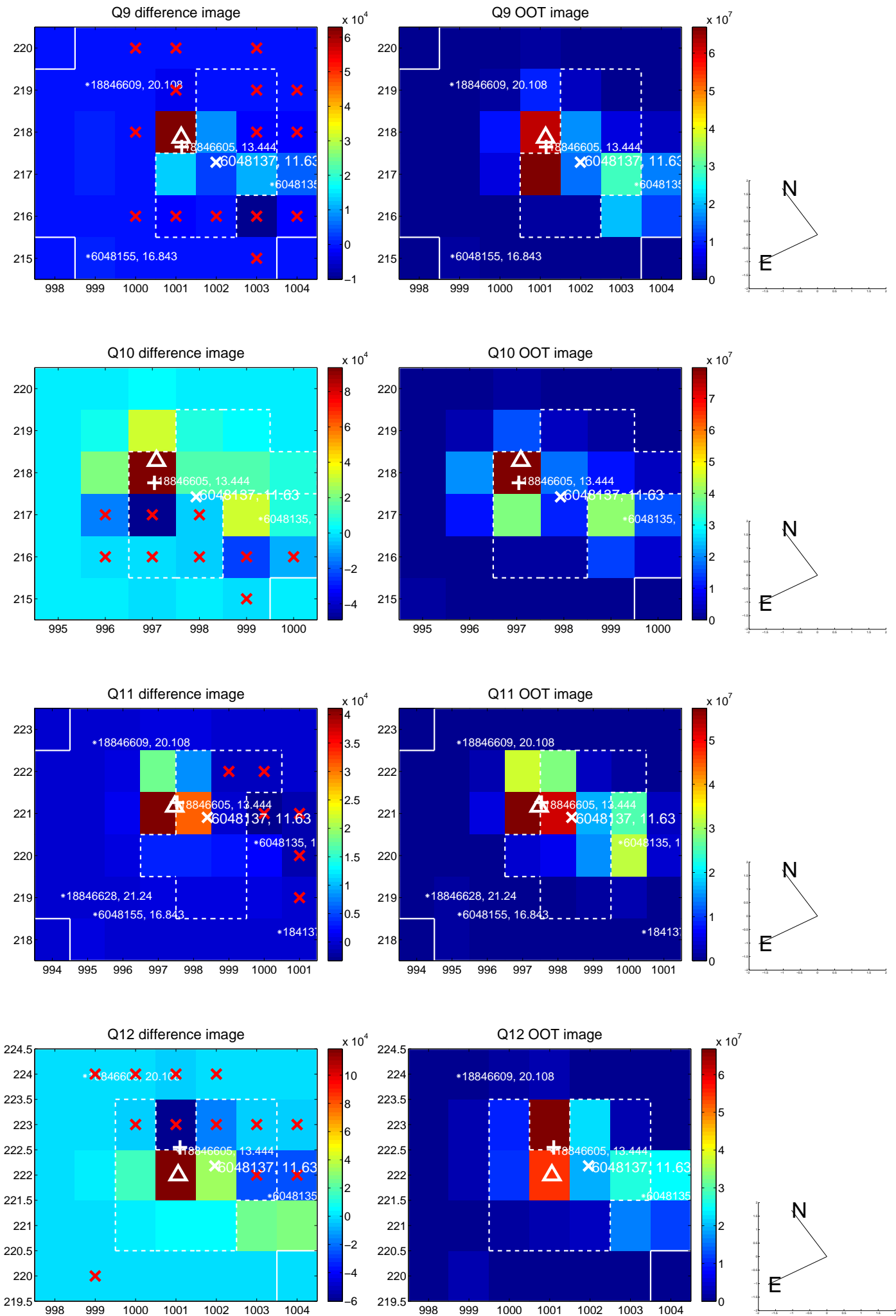
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



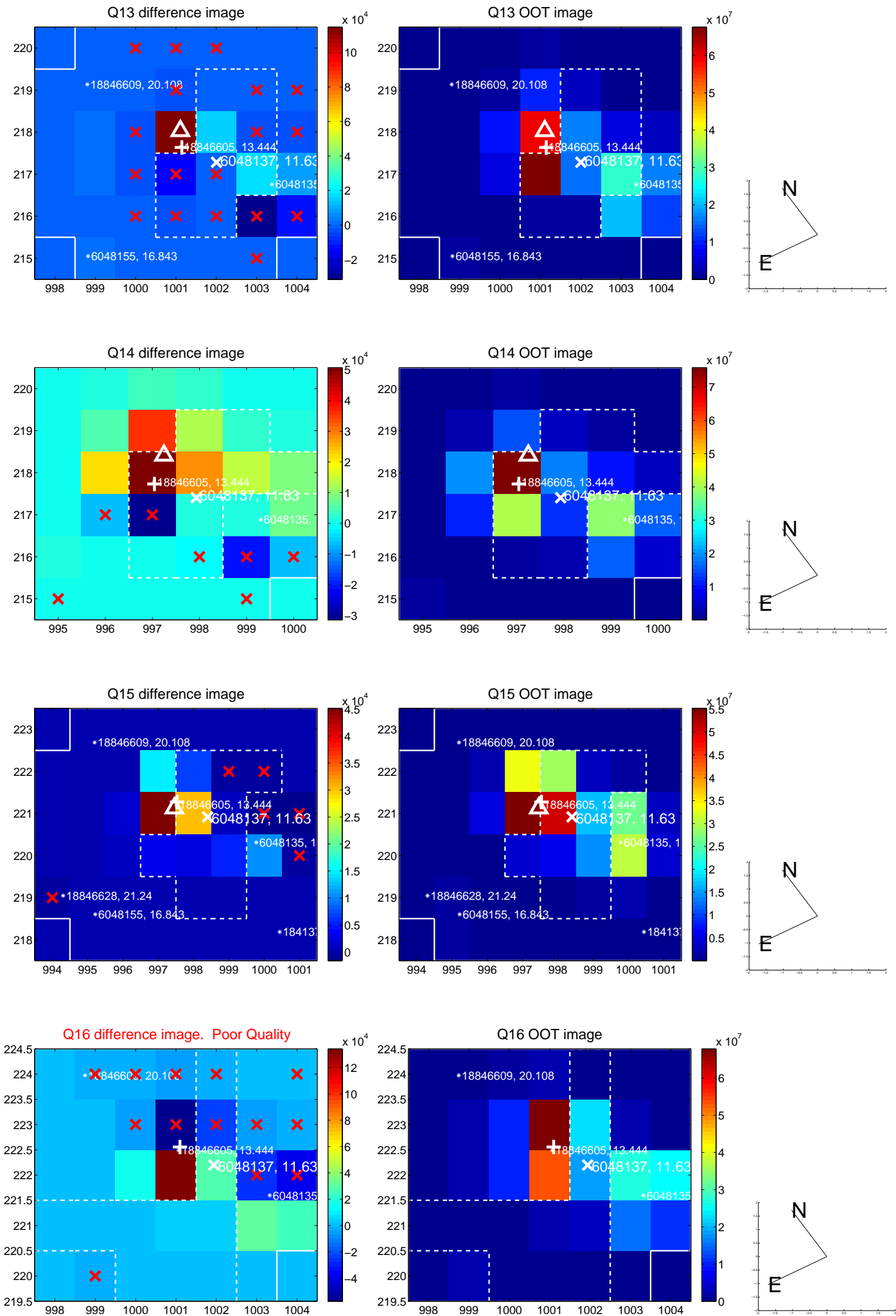
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



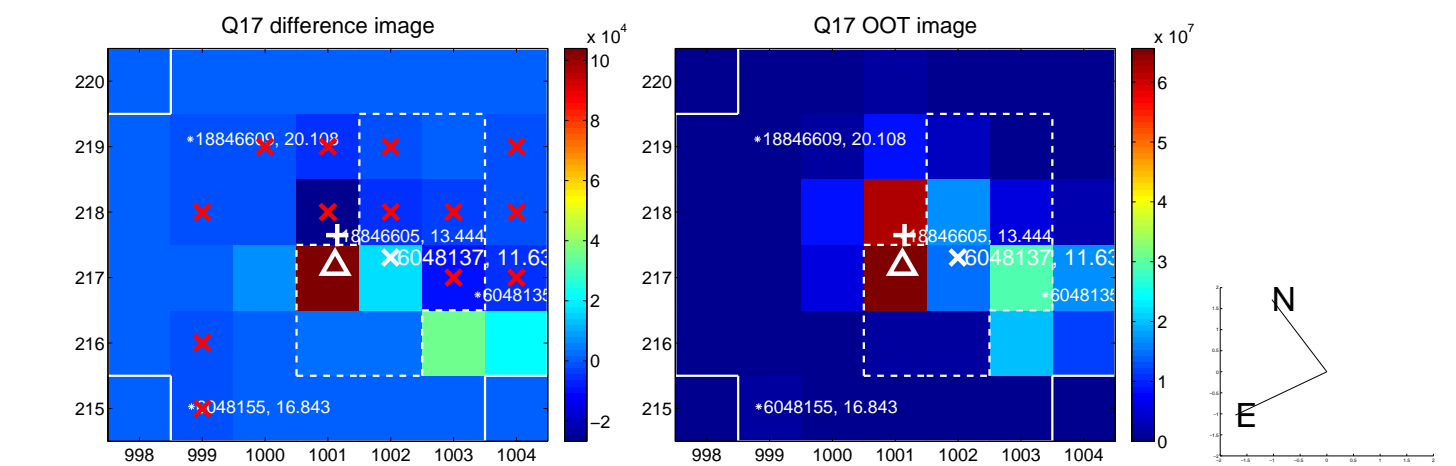
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



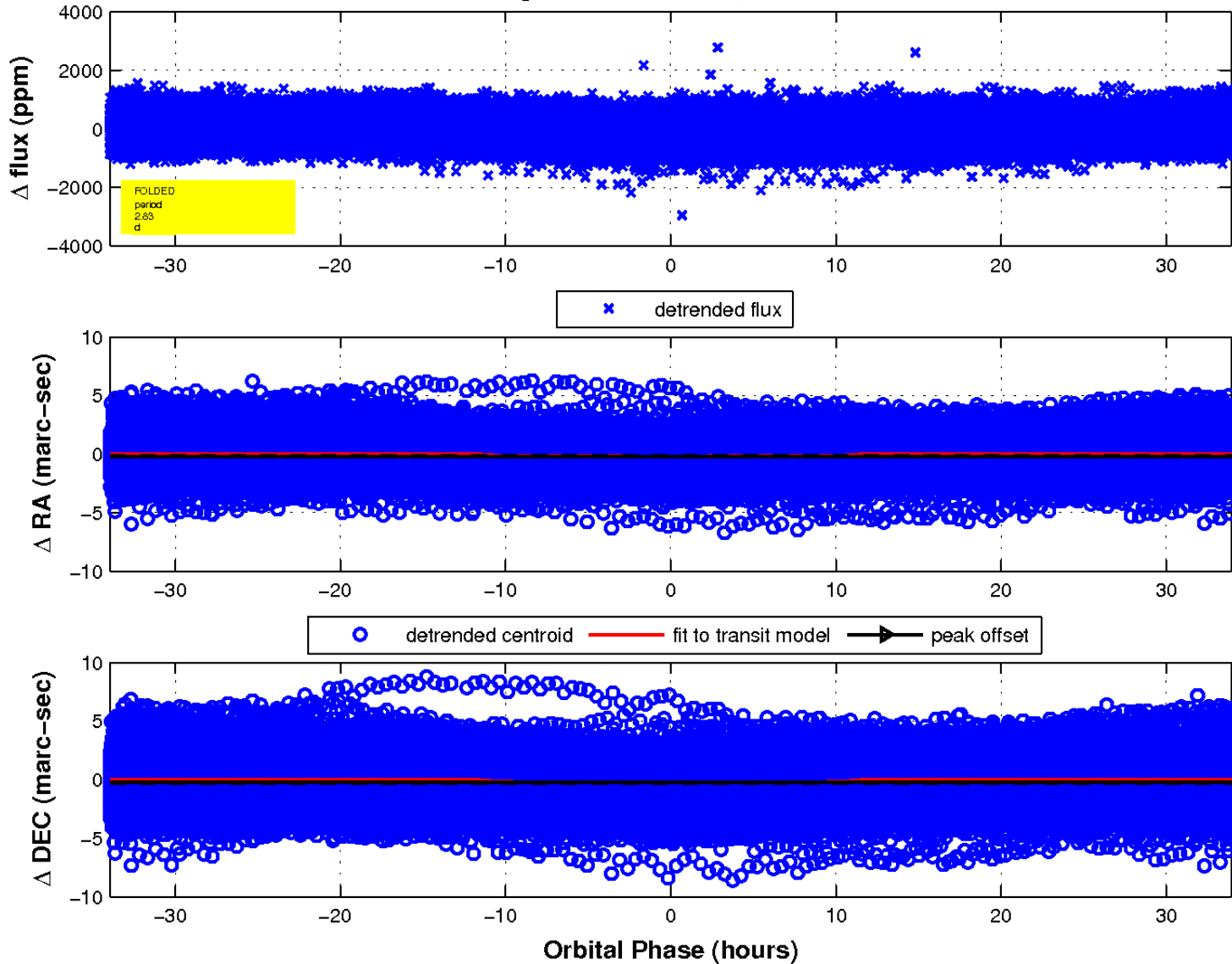
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 4 of 4



UKIRT Image

Declination

