

KIC 007116043

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})
007116043-01	OBS	6826.01	0.566776	131.845856	42.4	3.909	11.5	13.0	1.13	5576	0.76	6499.31
007116043-03	OBS	No	37.317954	146.597466	2842.0	1.841	10.6	8.0	1.13	5576	6.53	24.45
007116043-05	OBS	No	37.994544	166.125687	3934.9	3.182	11.3	8.4	1.13	5576	9.13	23.87
007116043-06	OBS	No	7.372257	132.336098	2150.6	2.855	10.3	9.5	1.13	5576	9.84	212.46
007116043-07	OBS	No	18.974014	149.582936	3458.6	2.102	10.8	8.8	1.13	5576	11.83	60.24

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007116043-01	OBS	FP	0.00	0	0	1	1	CENT_FEW_DIFFS—HALO_GHOST—EPHEM_MATCH
007116043-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_TER_ALT—MOD_POS_ALT—CENT_RESOLVED_OFFSET
007116043-05	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_POS_ALT—CENT_RESOLVED_OFFSET—HALO_GHOST
007116043-06	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_DV—MOD_TER_ALT—MOD_POS_ALT—CENT_RESOLVED_OFFSET
007116043-07	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—CENT_RESOLVED_OFFSET—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 007116043-01

TCE (1)	KIC	Parent (2)	Parent KIC	P ₁ :P ₂	Dist ($''$)	Δ Row	Δ Col	m ₂	m ₁	D ₂ /D ₁	Mechanism	Flag	σ_P	σ_T
007116043-01	7116043	RR-Lyr-pri	7198959	1:1	650.3	78	-144	7.86	14.53	14840.00	Direct-PRF	0	4.31	17.04

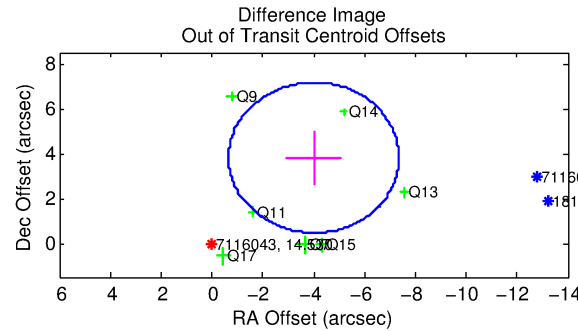
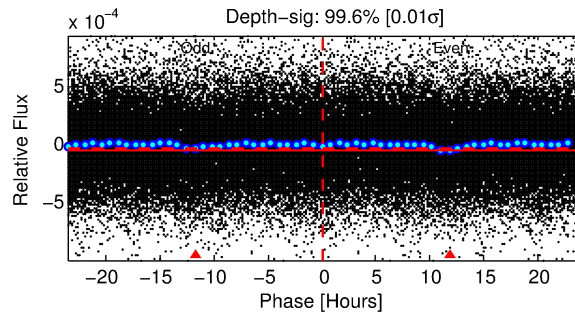
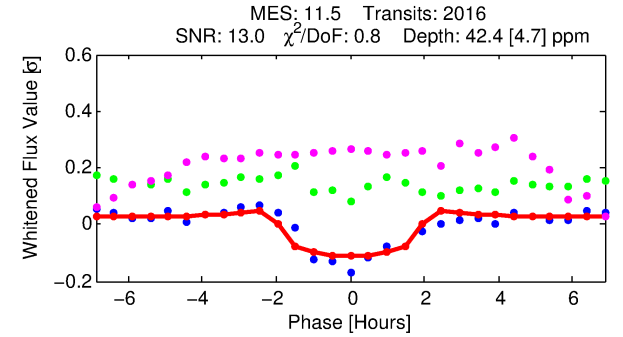
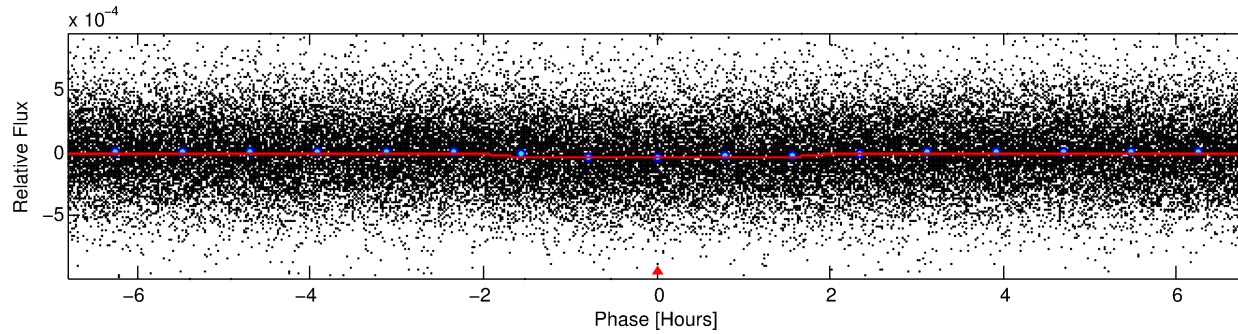
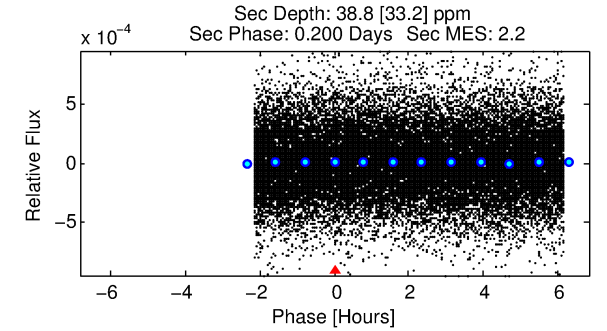
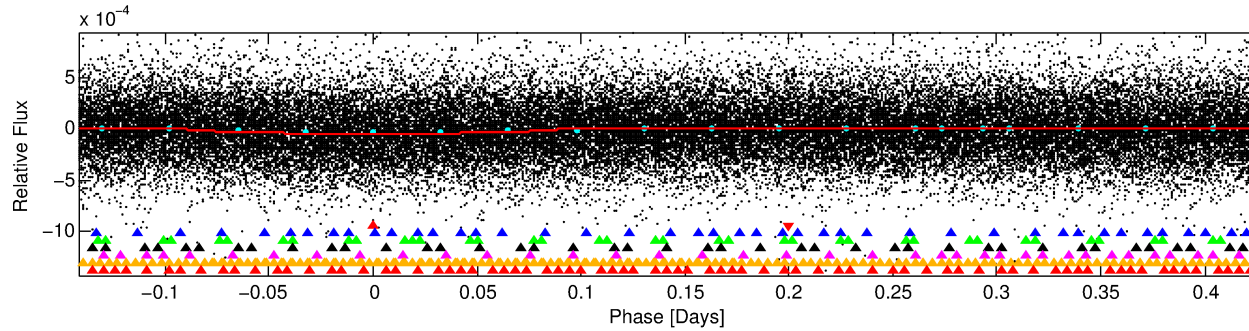
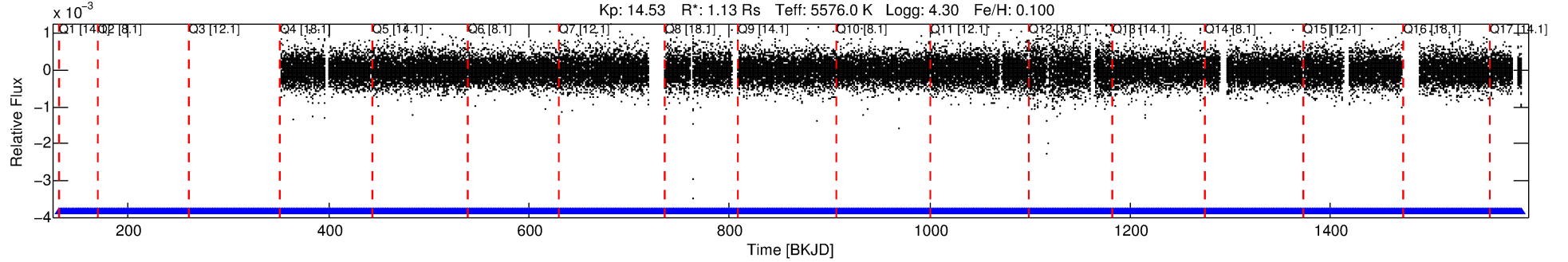
Notes: P₁:P₂ is the period ratio. Dist is the distance in arcseconds. Δ Row and Δ Col are the number of pixels apart in row and column. m₂ and m₁ are the magnitudes of the parent and child. D₂/D₁ is the parent's transit depth divided by the child's. σ_P and σ_T are the significance of the match in period and epoch. For a match to be considered significant $\sigma_P < 5.0$ and $\sigma_T < 5.0$. Matches which have σ_P and σ_T very close to this cutoff should receive extra scrutiny, especially if the period ratio is very large.

DV One-Page Summary

KIC: 7116043 Candidate: 1 of 7 Period: 0.567 d

KOI: K06826 Corr: No Ephemeris Match

Kp: 14.53 R*: 1.13 Rs Teff: 5576.0 K Logg: 4.30 Fe/H: 0.100



DV Fit Results:

Period = 0.56678 [0.00001] d
Epoch = 131.8459 [0.0028] BKJD
Rp/R* = 0.0061 [0.0040]
a/R* = 1.20 [0.97]
b = 0.56 [3.32]
Seff = 6499.31 [2440.77]
Teff = 2290 [215] K
Rp = 0.76 [0.53] Re
a = 0.0131 [0.0031] AU
Ag = 6.33 [10.05] [0.53σ]
Teffp = 5615 [2181] K [1.52σ]

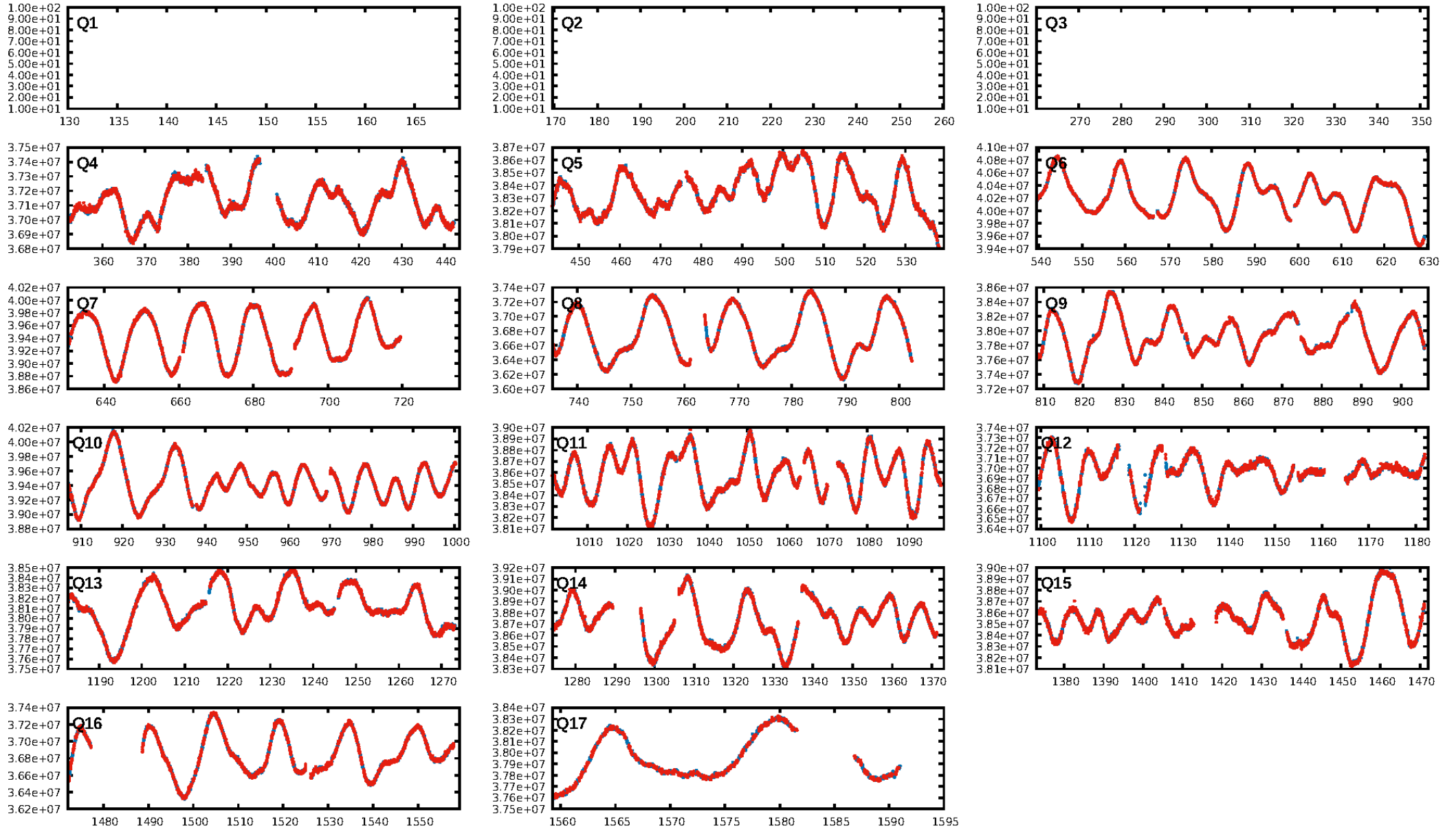
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [33.74σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGoF-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [1968/1968]
GhostDiagnostic-chr: 0.001811
Centroid-sig: 0.0%
Centroid-so: 0.597 arcsec [0.86σ]
OotOffset-rm: 5.530 arcsec [4.95σ]
KicOffset-rm: 1.196 arcsec [1.10σ]
OotOffset-st: 1/3/0/3 [7]
KicOffset-st: 1/3/0/3 [7]
DiffImageQuality-fgm: 0.14 [1/7]
DiffImageOverlap-fno: 1.00 [14/14]

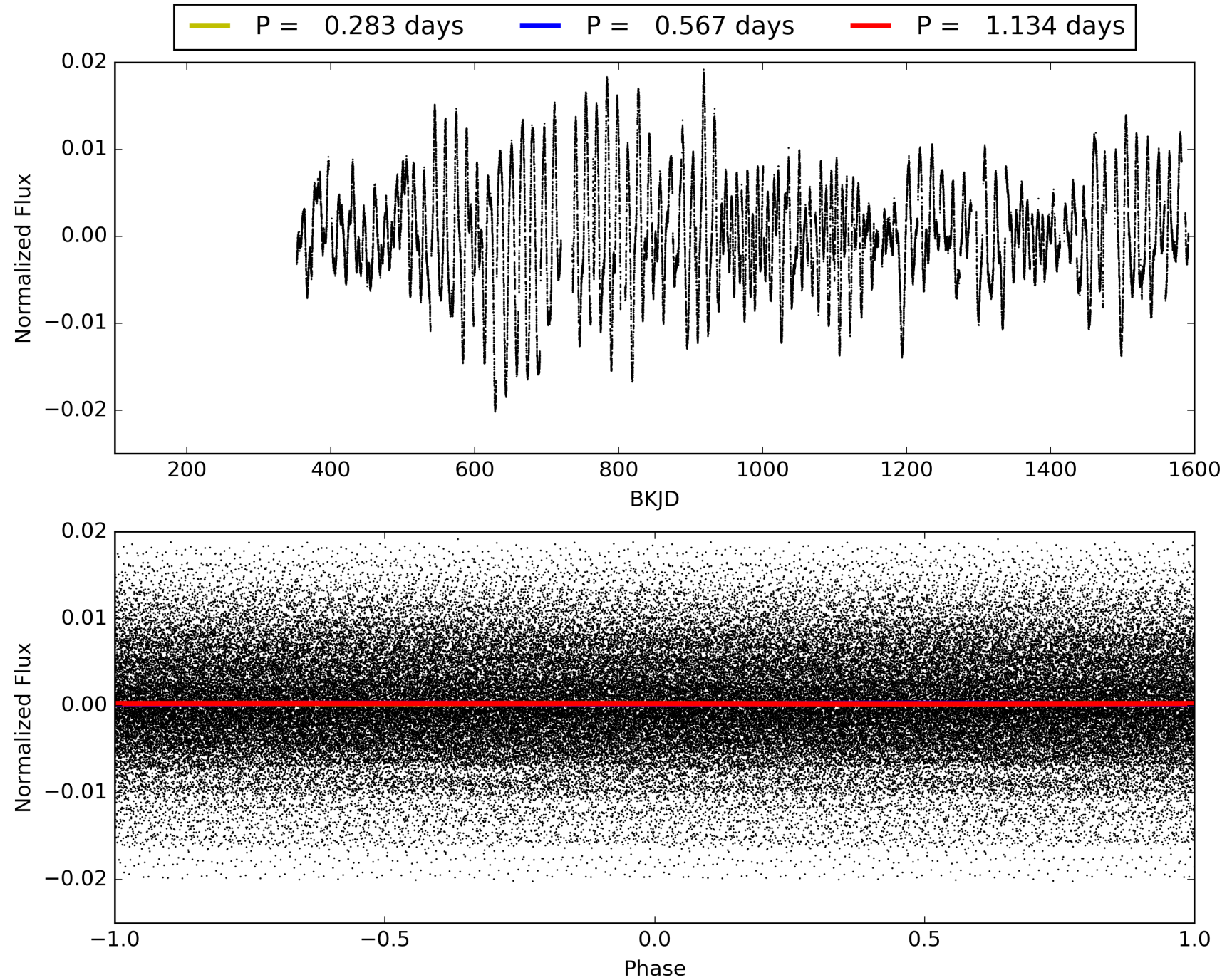
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 15:04:32 Z

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

TCE 007116043-01, PDC Light Curves

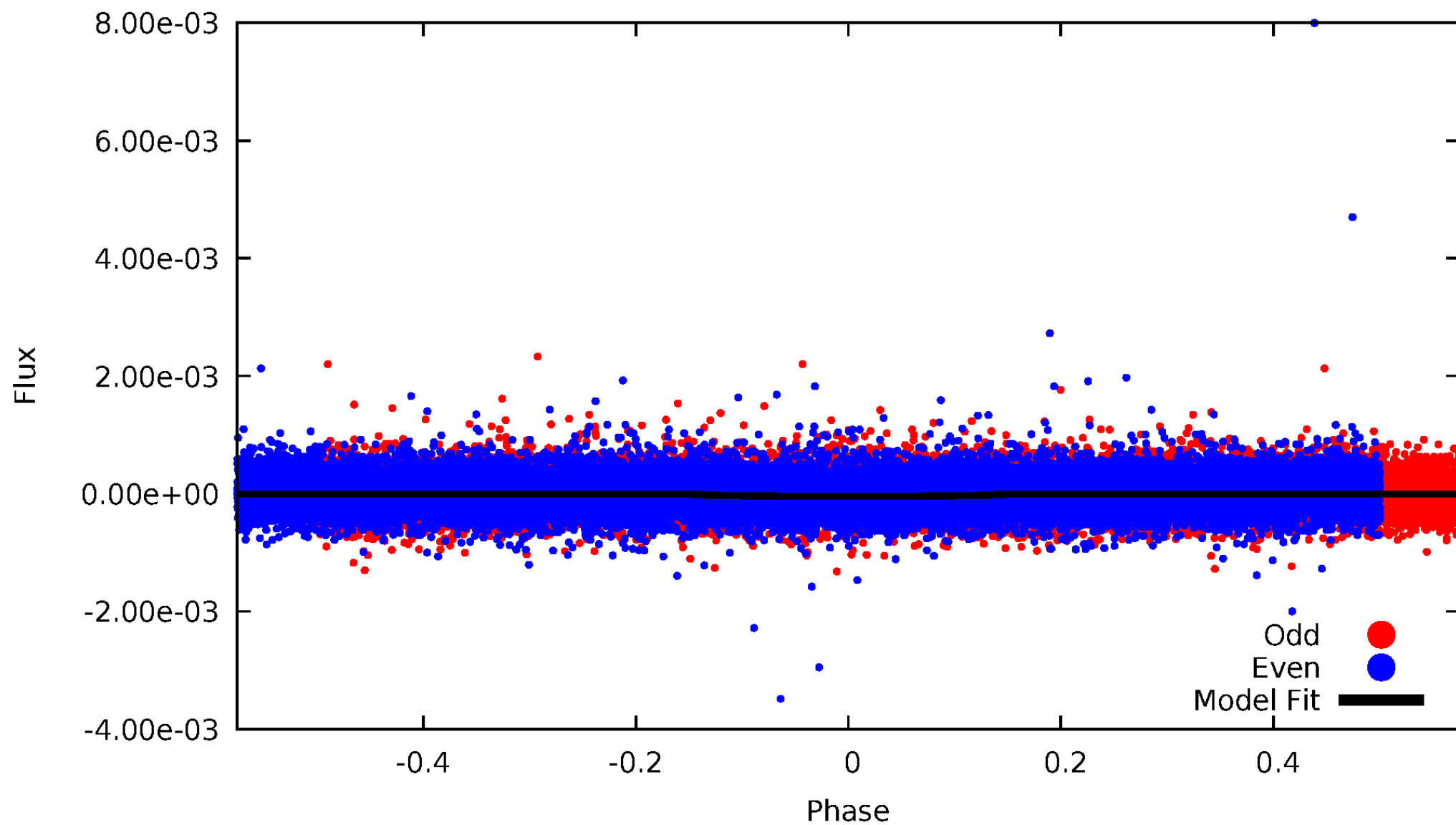


TCE 007116043-01



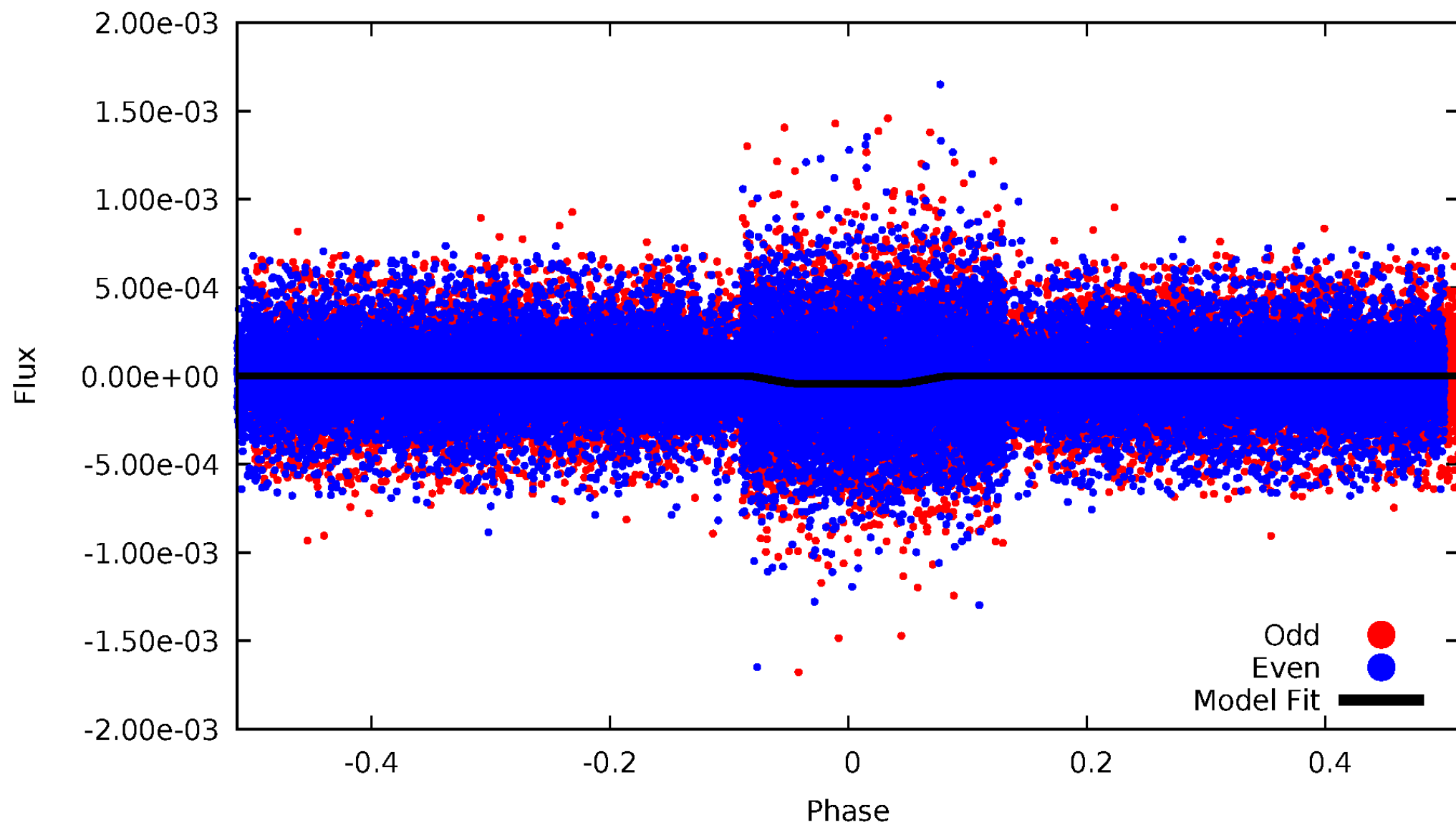
DV Odd/Even

TCE 007116043-01

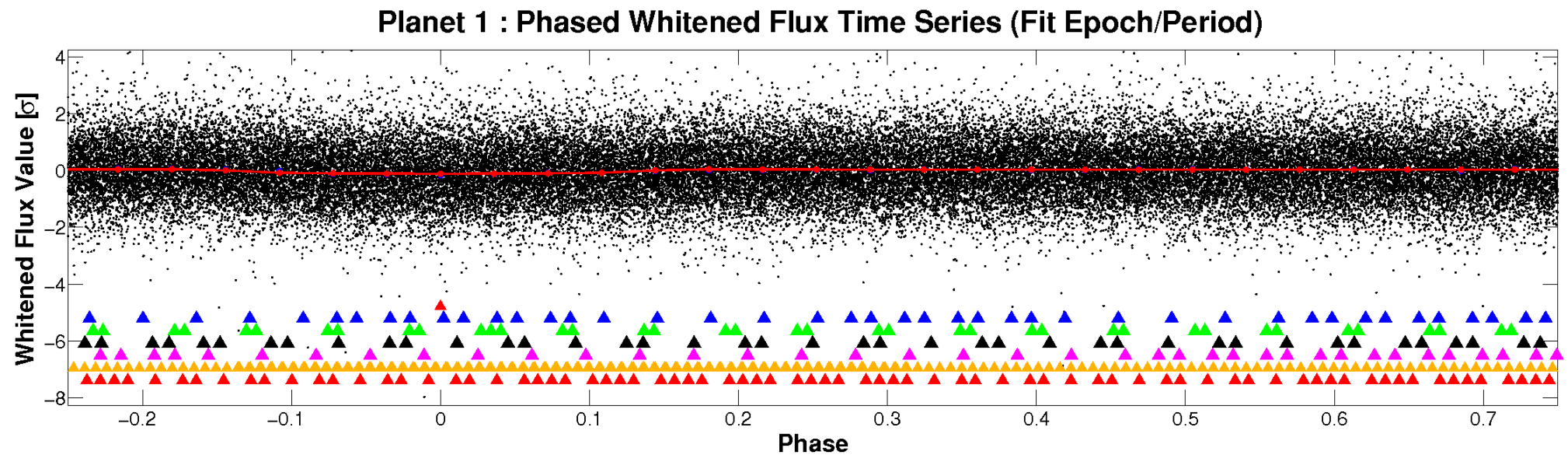
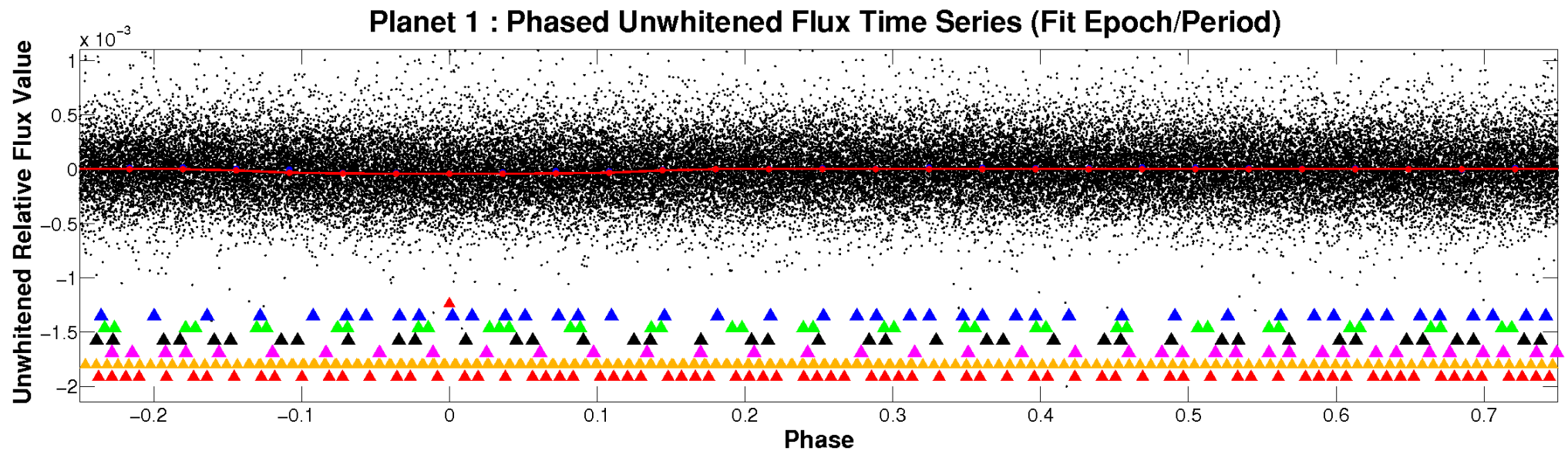


ALT Odd/Even

TCE 007116043-01

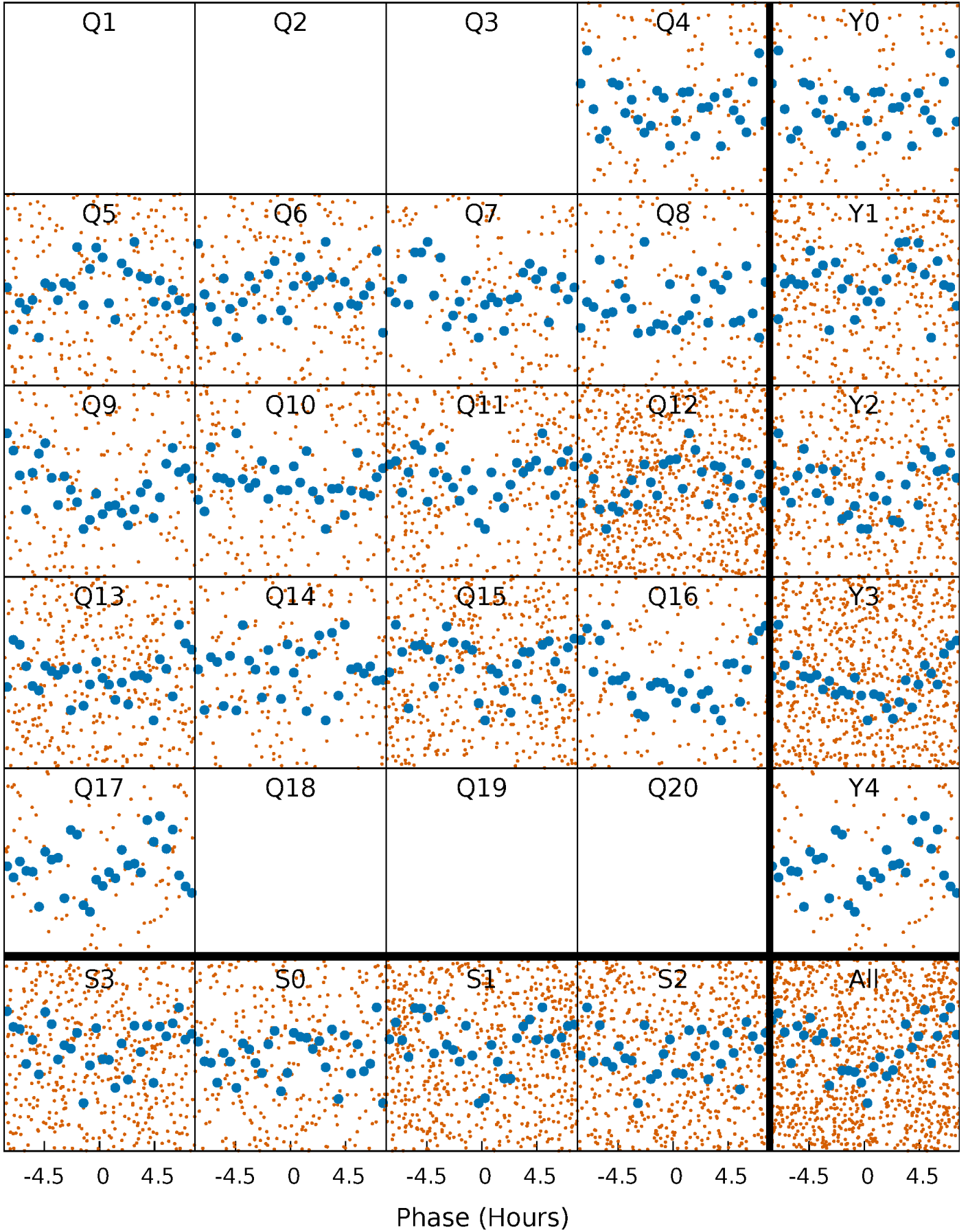


Non-Whitened Vs. Whitened Light Curve



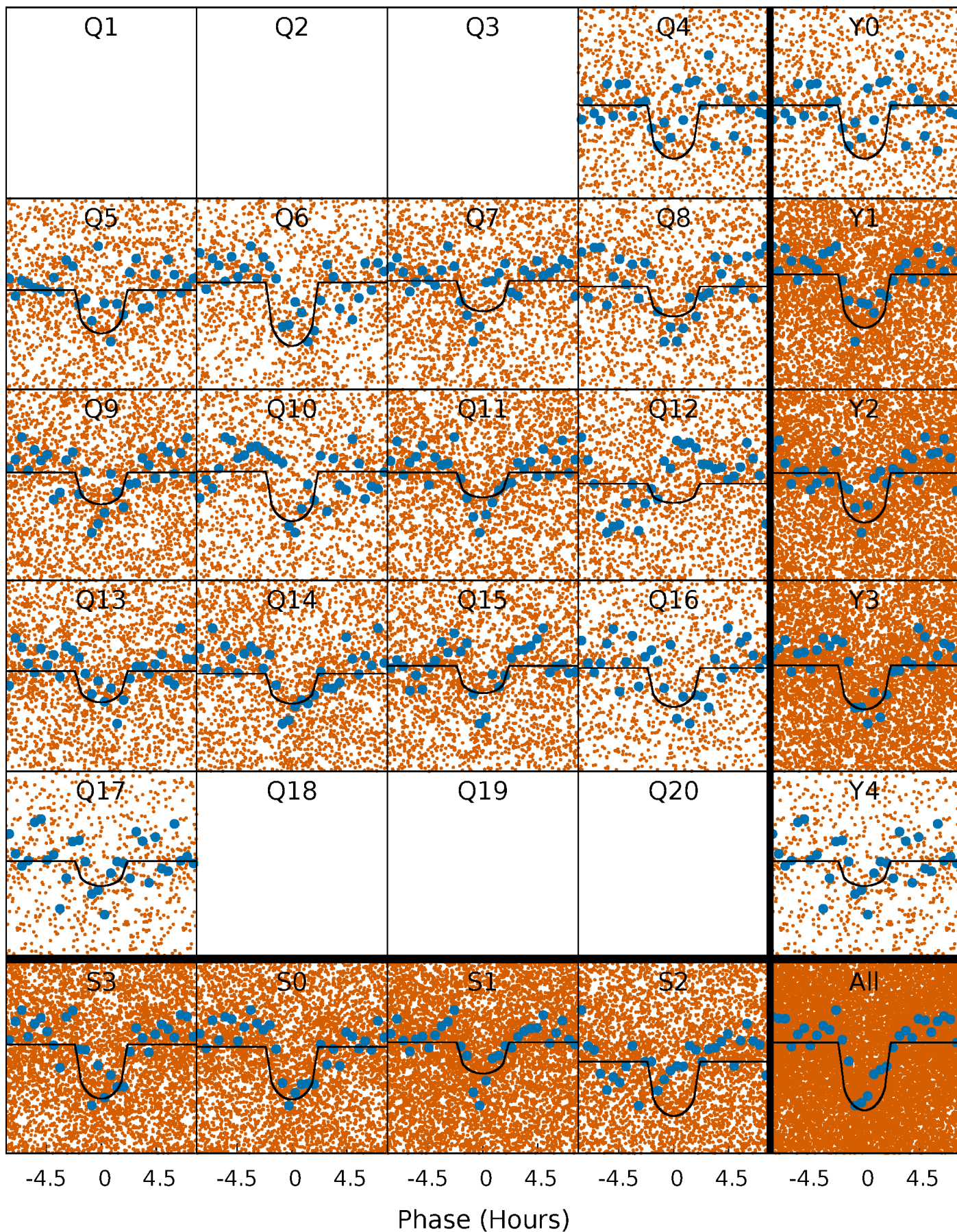
PDC Quarter-Phased Transit Curves

TCE 007116043-01 P= 0.566776 Days $T_0=131.845856$ (BKJD)



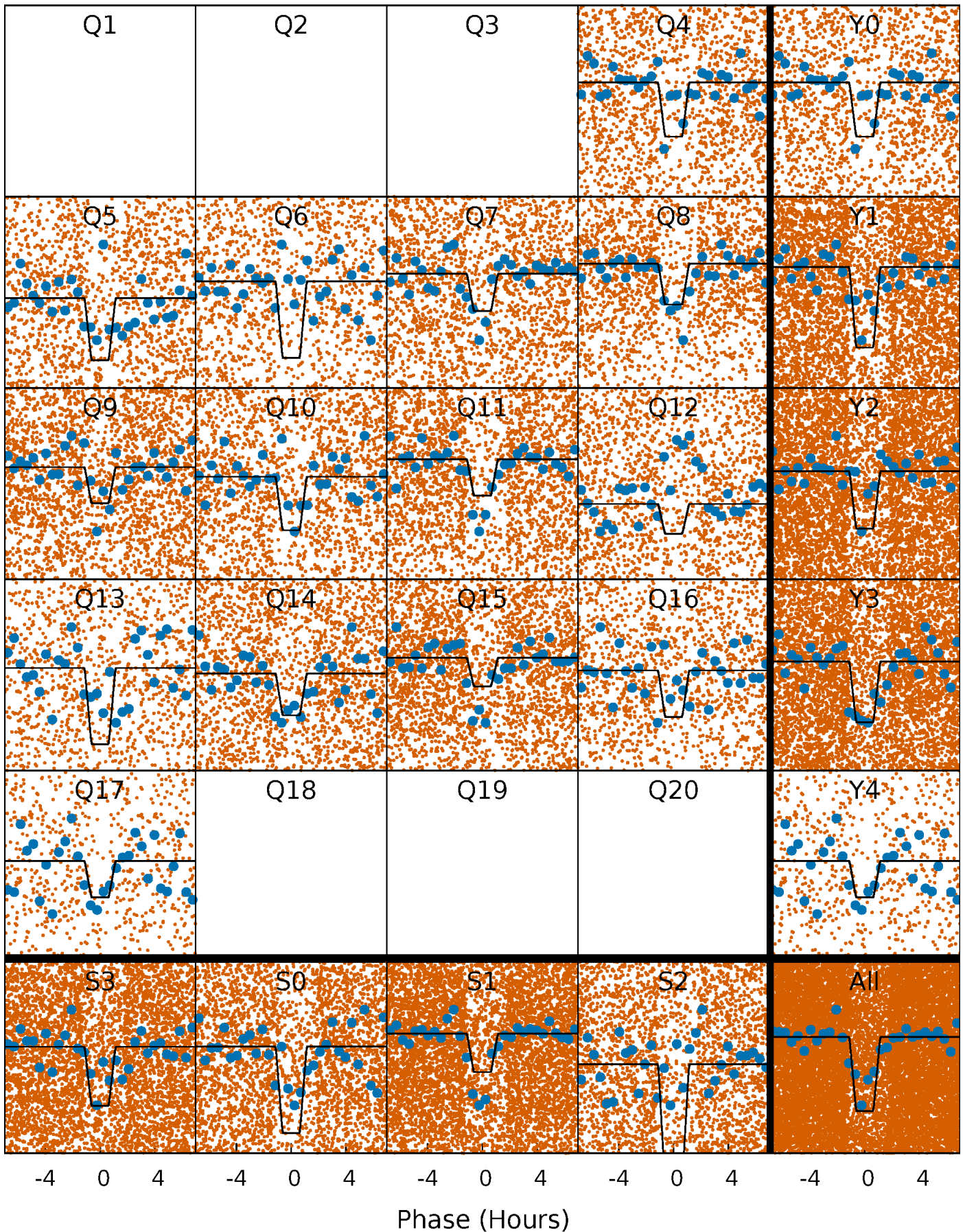
DV Quarter-Phased Transit Curves

TCE 007116043-01 P= 0.566776 Days $T_0=131.845856$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

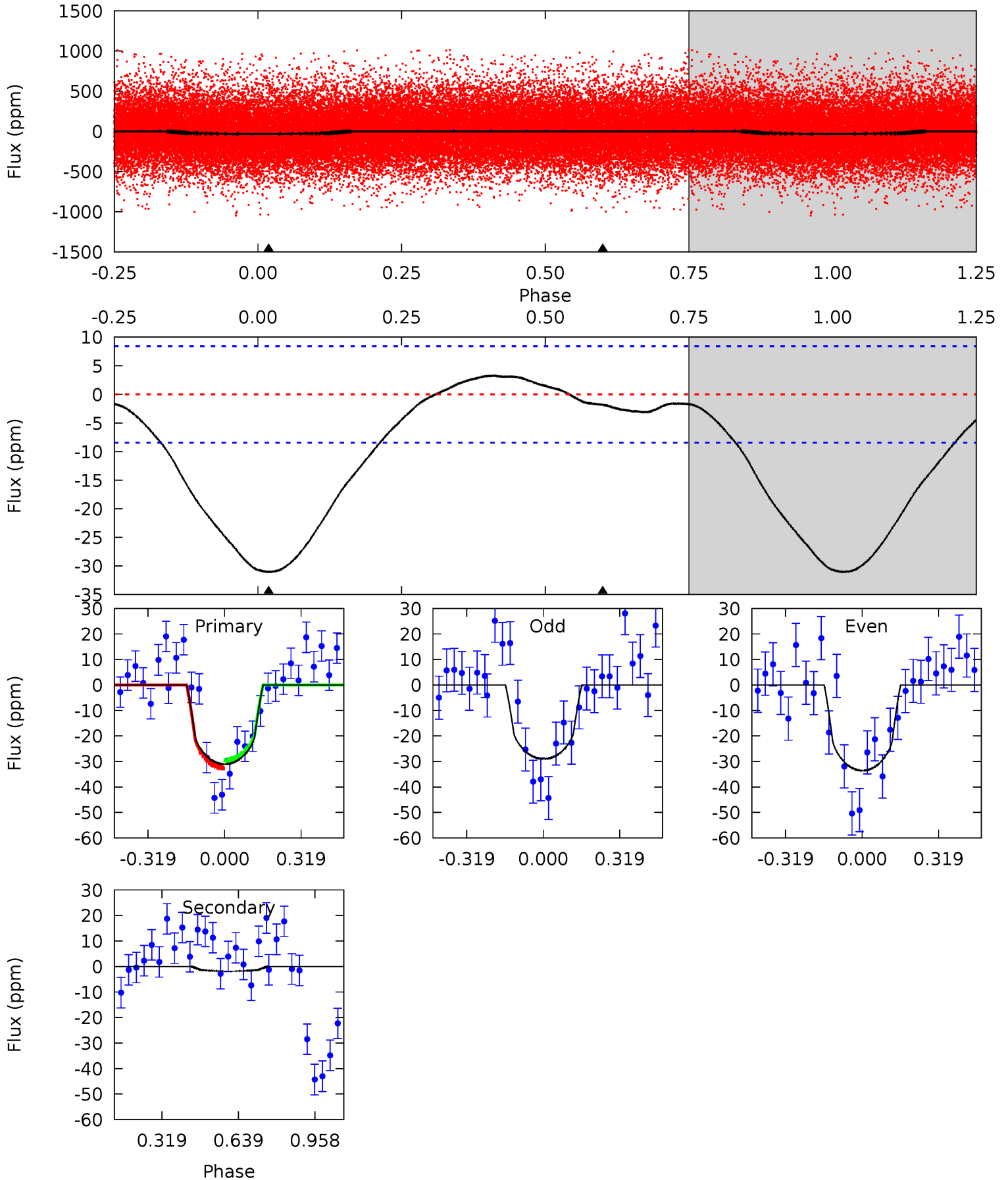
TCE 007116043-01 P= 0.566795 Days $T_0=131.807021$ (BKJD)



DV Model-Shift Uniqueness Test

007116043-01, P = 0.566776 Days, E = 131.845856 Days

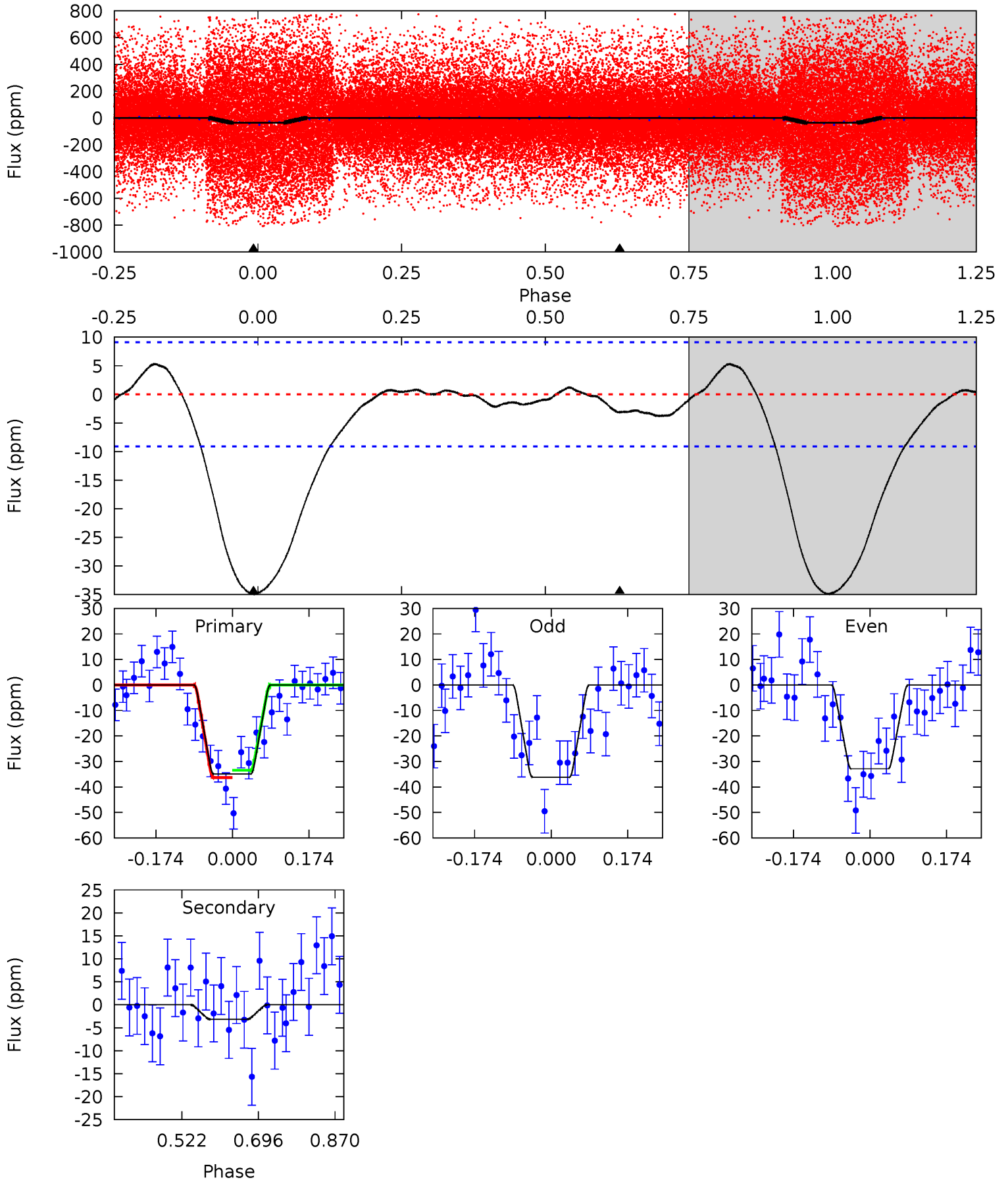
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.9	0.95	0	0	4.31	1.00	0.84	15.9	15.9	0.95	0.95	1.17	0.83	0.10	0.70



Alt Model-Shift Uniqueness Test

007116043-01, P = 0.566795 Days, E = 131.807021 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.1	1.54	0	0	4.45	1.36	0.75	17.1	17.1	1.54	1.54	0.80	0.97	0.13	0.70



Stellar Parameters For KIC 007116043

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5576^{+183}_{-183}	$4.297^{+0.195}_{-0.195}$	$0.100^{+0.250}_{-0.300}$	$1.132^{+0.314}_{-0.257}$	$0.928^{+0.115}_{-0.084}$	$0.900^{+0.941}_{-0.466}$
	+3%/-3%	+5%/-5%	+250%/-300%	+28%/-23%	+12%/-9%	+105%/-52%
Source	KIC0	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 007116043-01 / KOI 6826.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-2 ± 2	$0.79^{+0.52}_{-0.39}$	3198^{+246}_{-210}	-2643^{+6448}_{-611}	$0.228^{+0.950}_{-0.248}$
Alt.	-3 ± 2	$0.86^{+0.53}_{-0.46}$	3196^{+266}_{-240}	2535^{+1566}_{-5619}	$0.355^{+1.369}_{-0.259}$

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 $A_{obs} \gg 1.0$

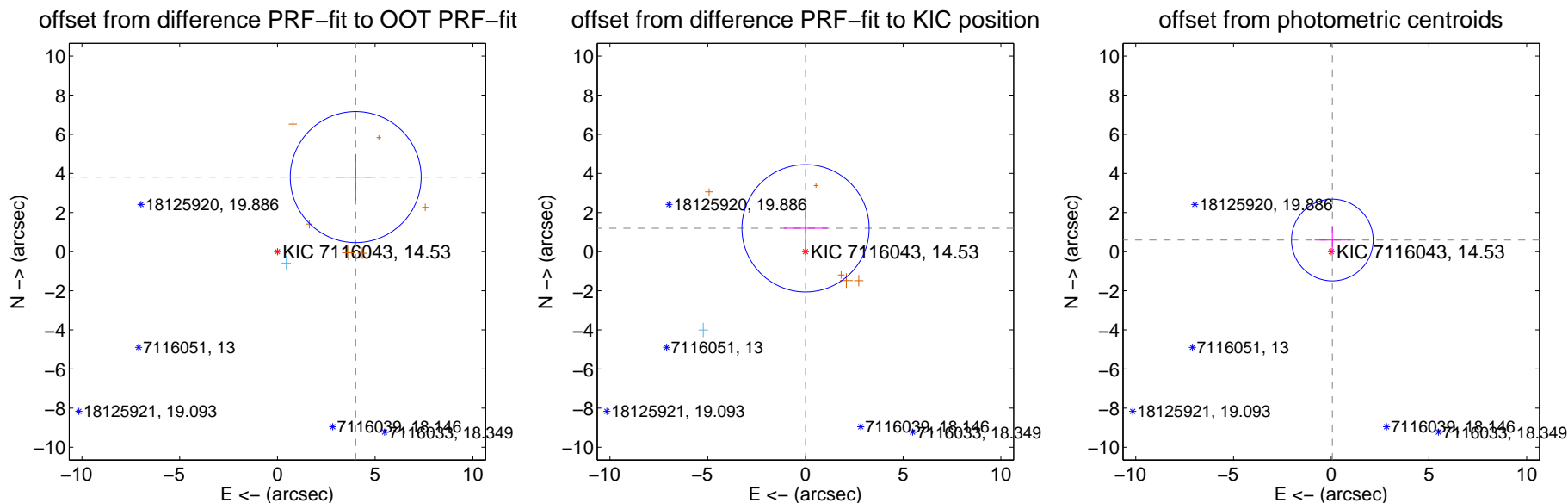
DV Centroid Data

Supplemental centroid analysis for 007116043-01. Kepler magnitude: 14.53. Transit SNR 13.03

There are 1 quarters with good PRF difference image offsets

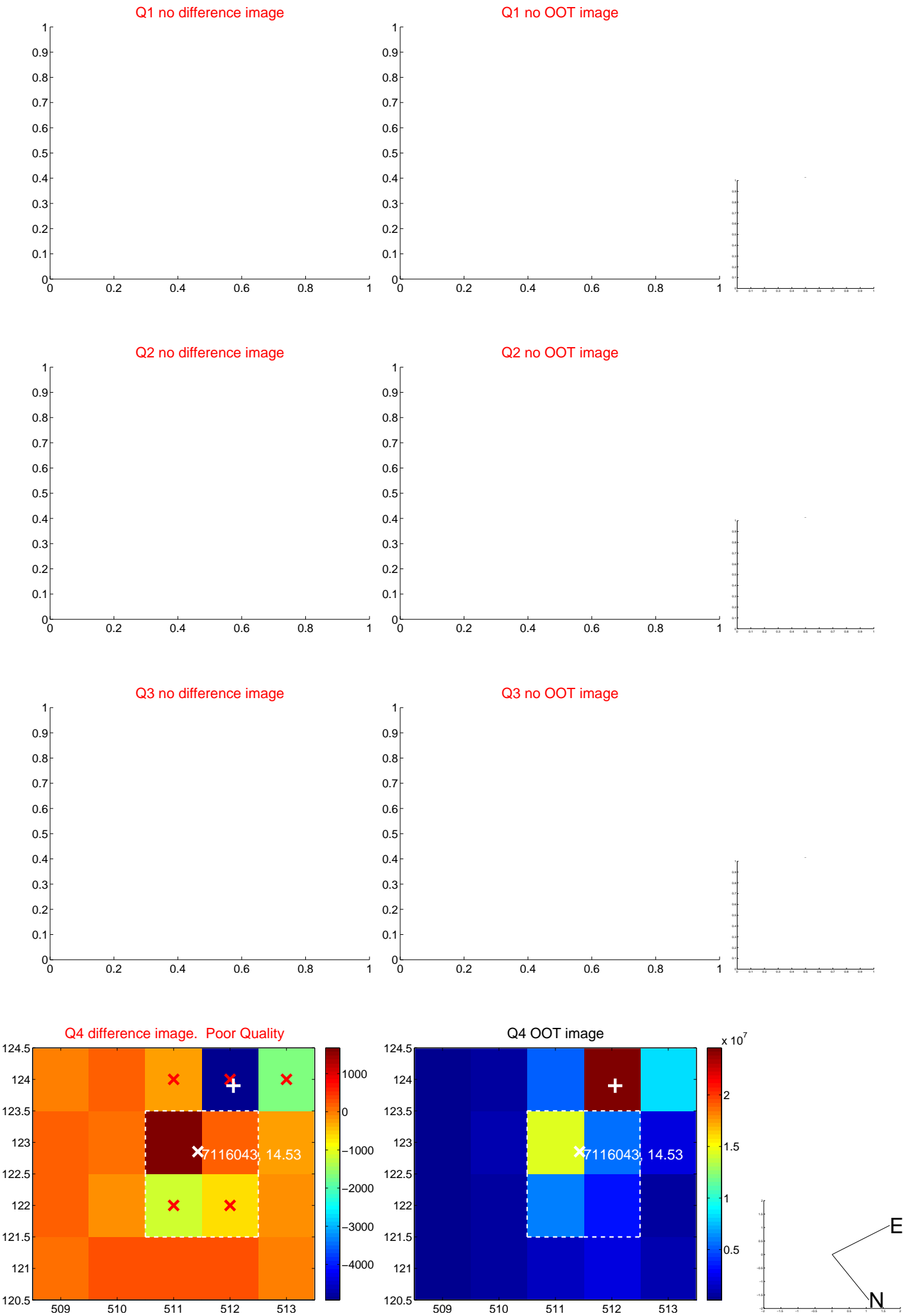
The OOT PRF centroid is offset from the target star catalog position by about 6.64 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	5.530 ± 1.116	4.95	-4.006 ± 1.049	3.812 ± 1.187
PRF-fit source offset from KIC position	1.196 ± 1.085	1.10	-0.007 ± 1.118	1.196 ± 1.085
photometric centroid source offset	0.60 ± 0.70	0.86	-0.06 ± 0.91	0.59 ± 0.69

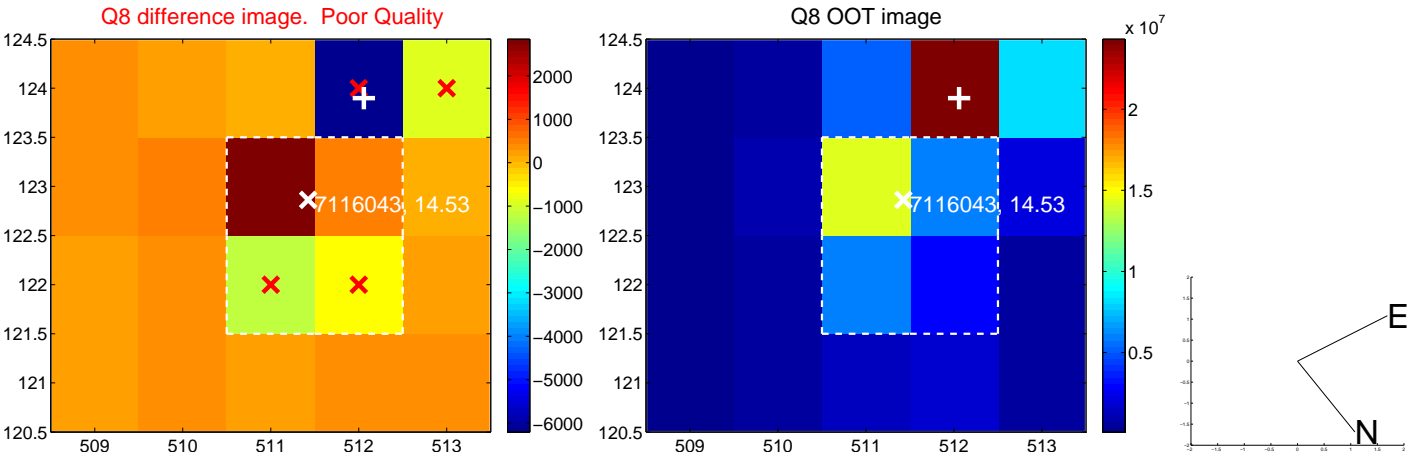
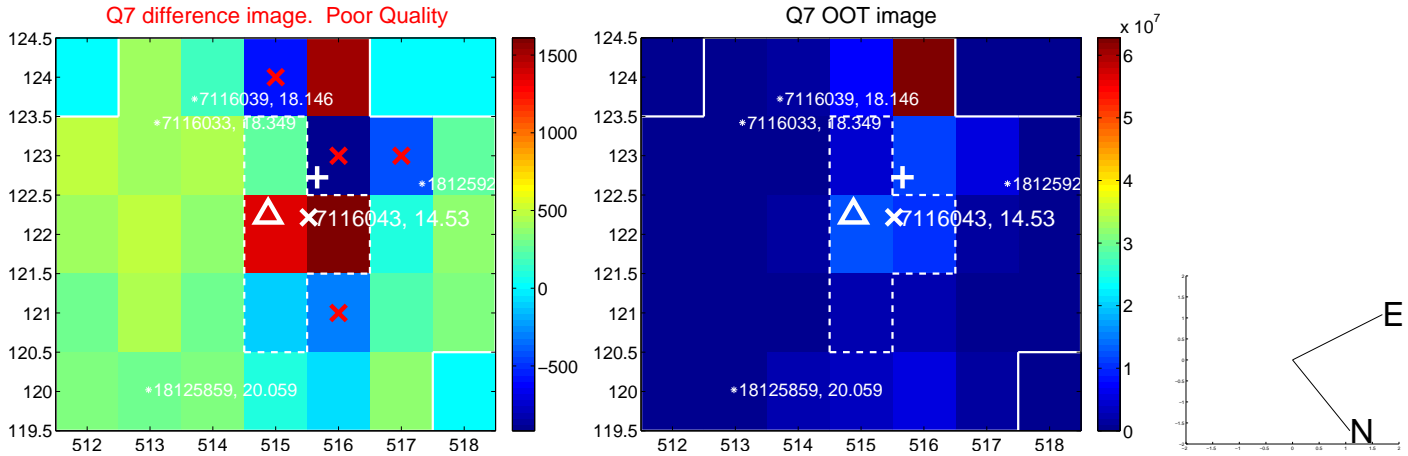
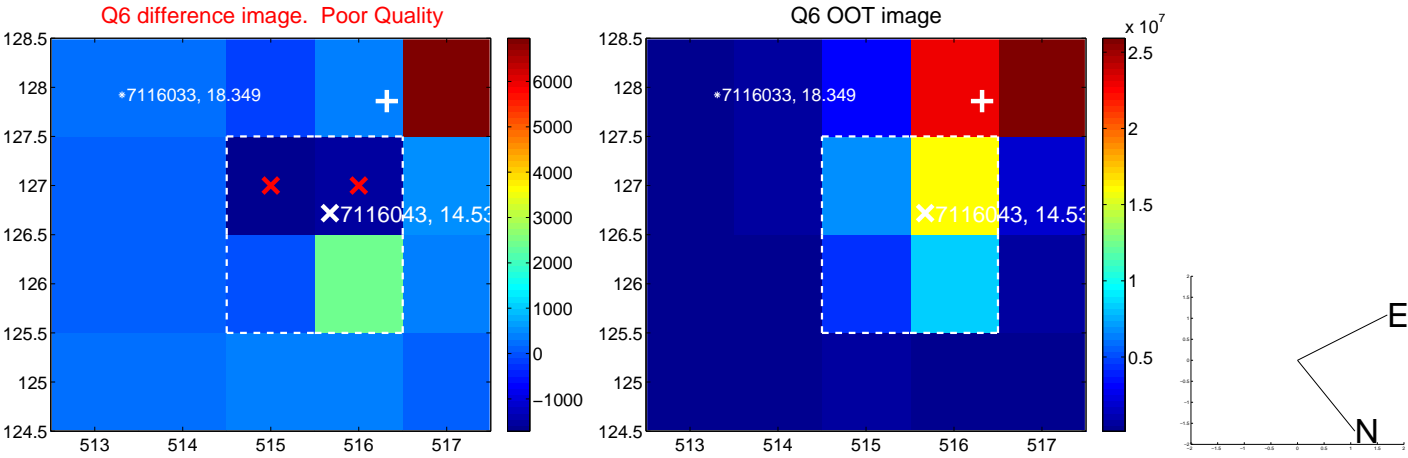
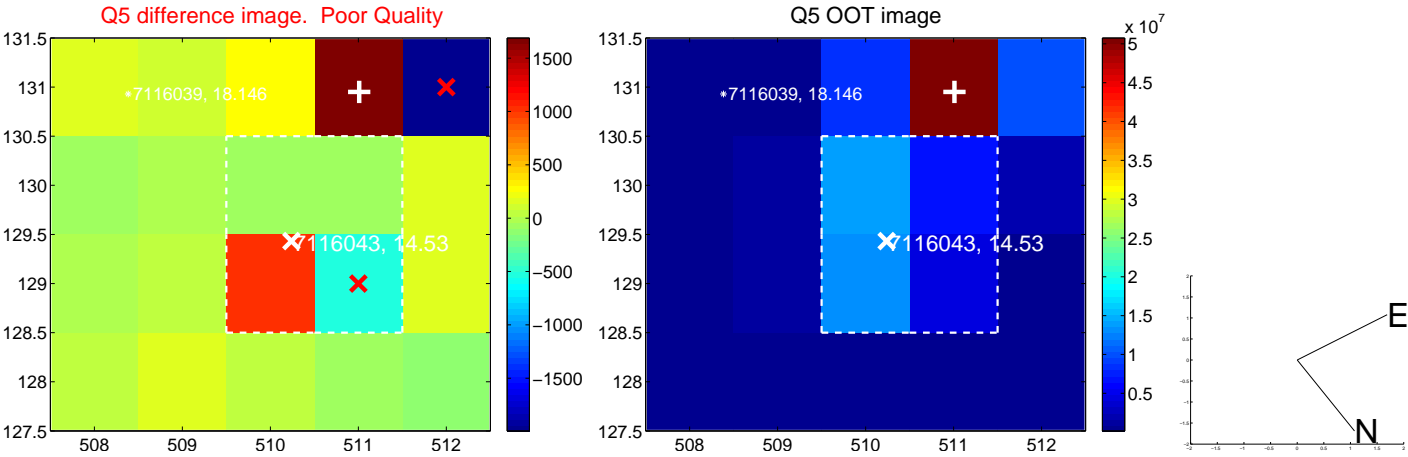


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

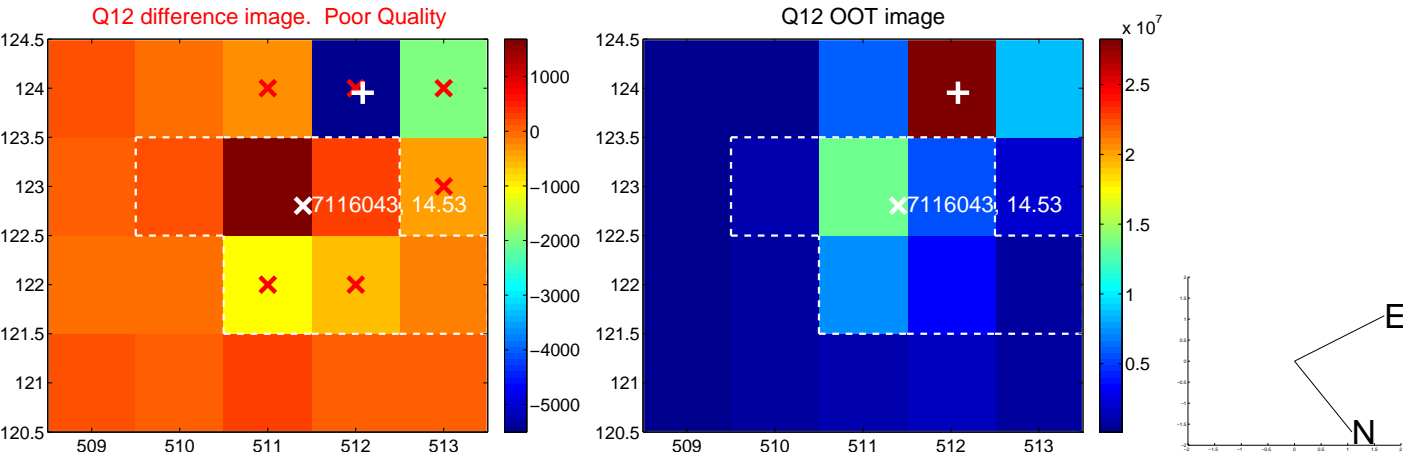
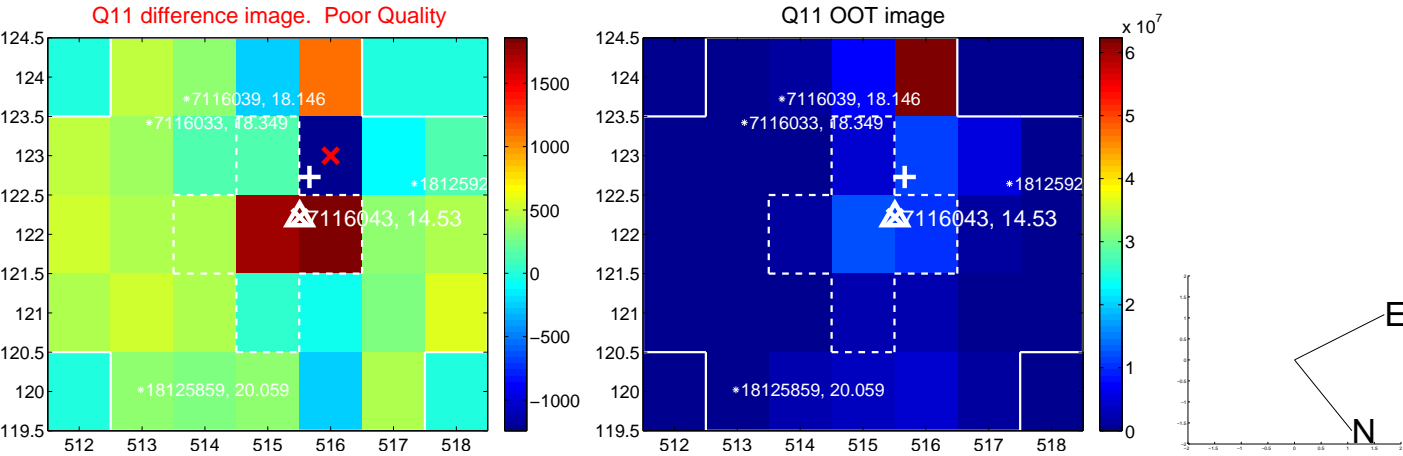
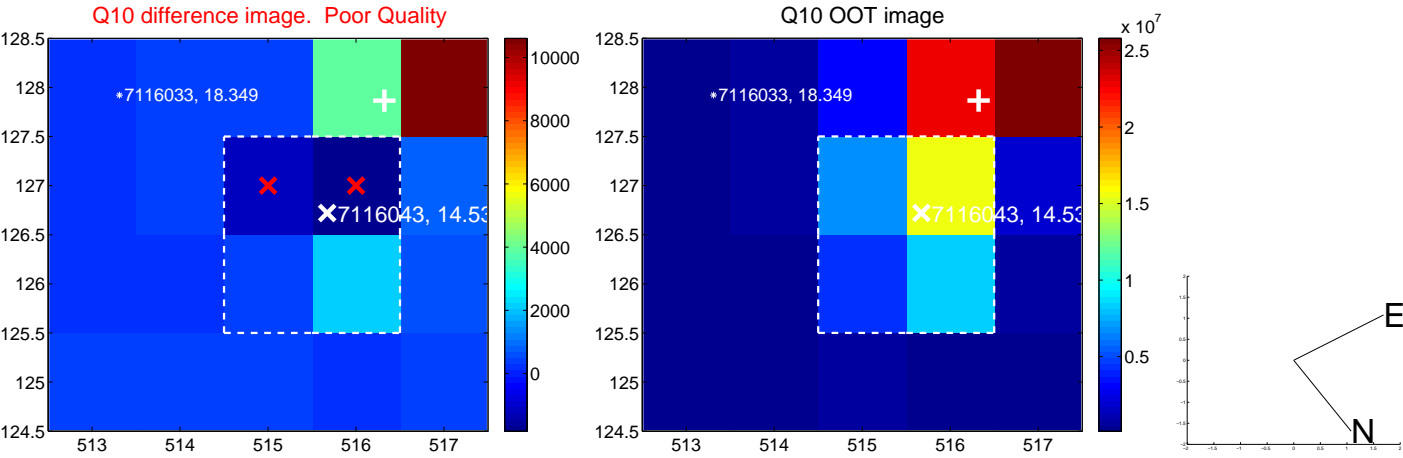
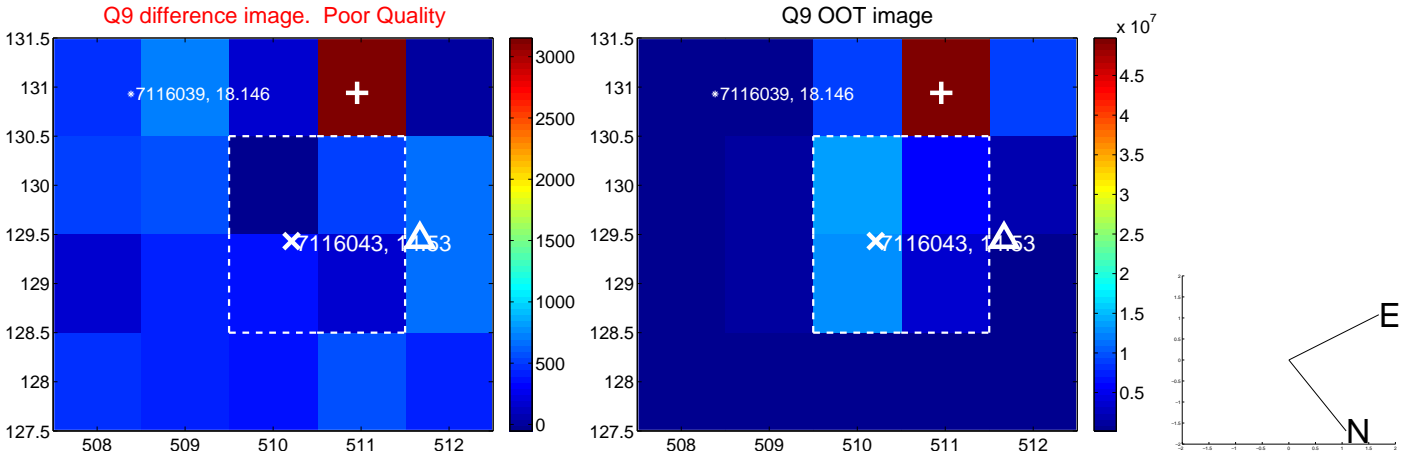
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



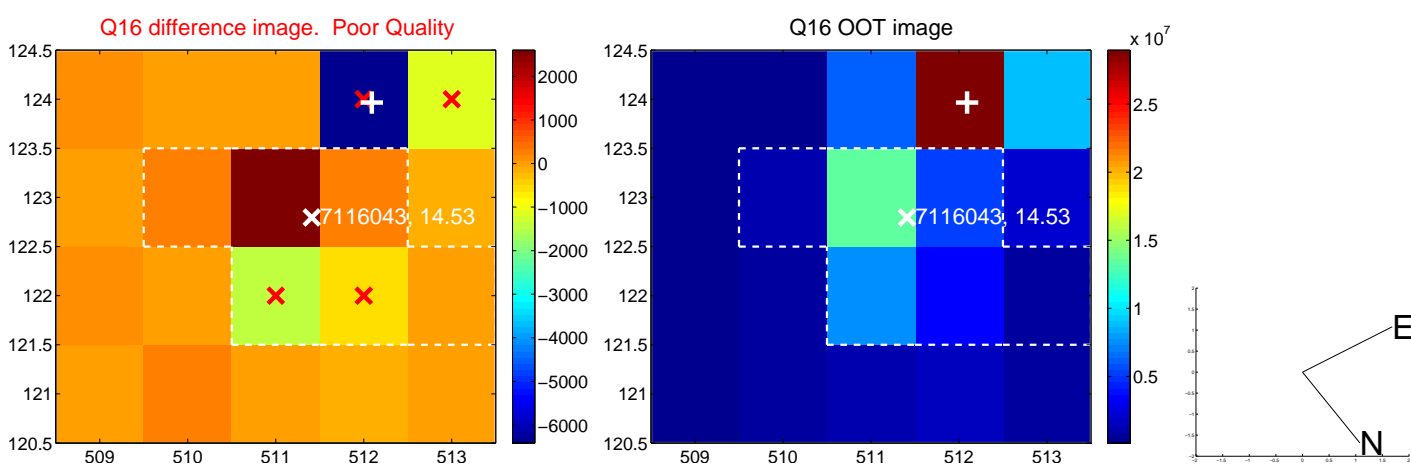
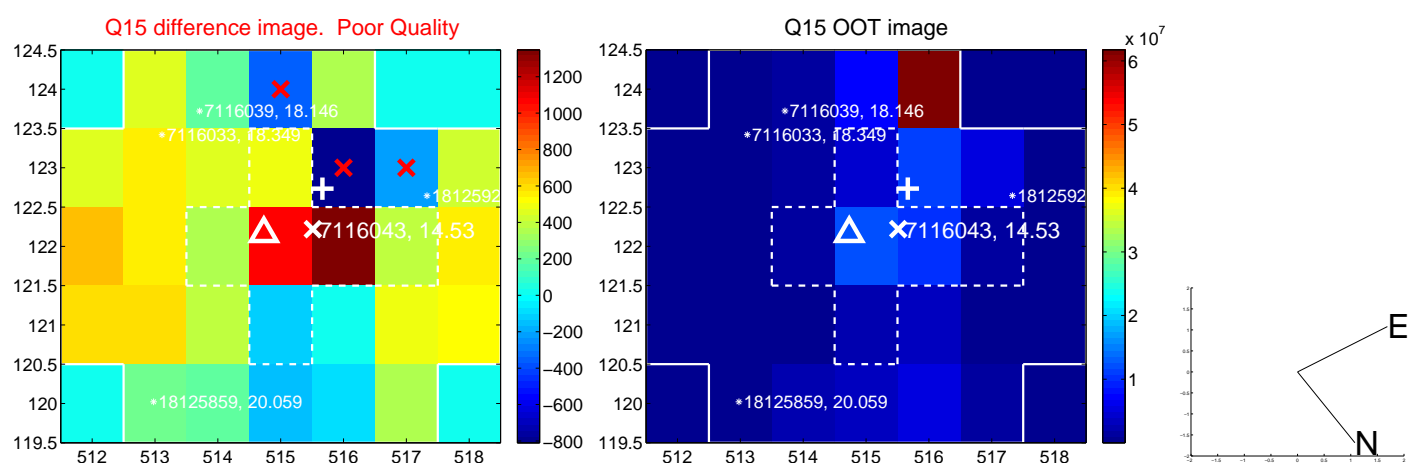
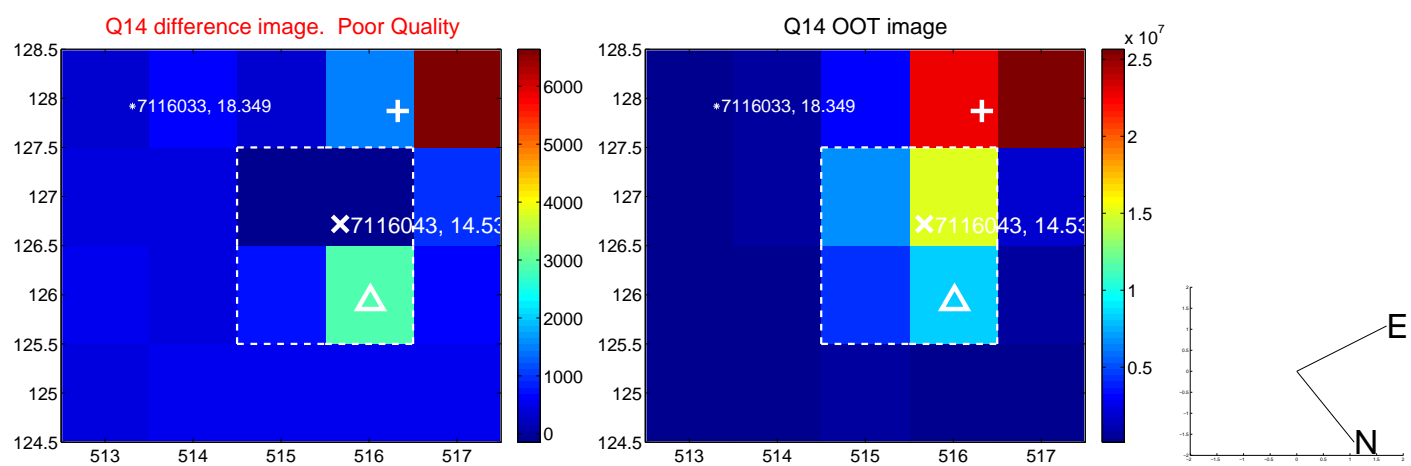
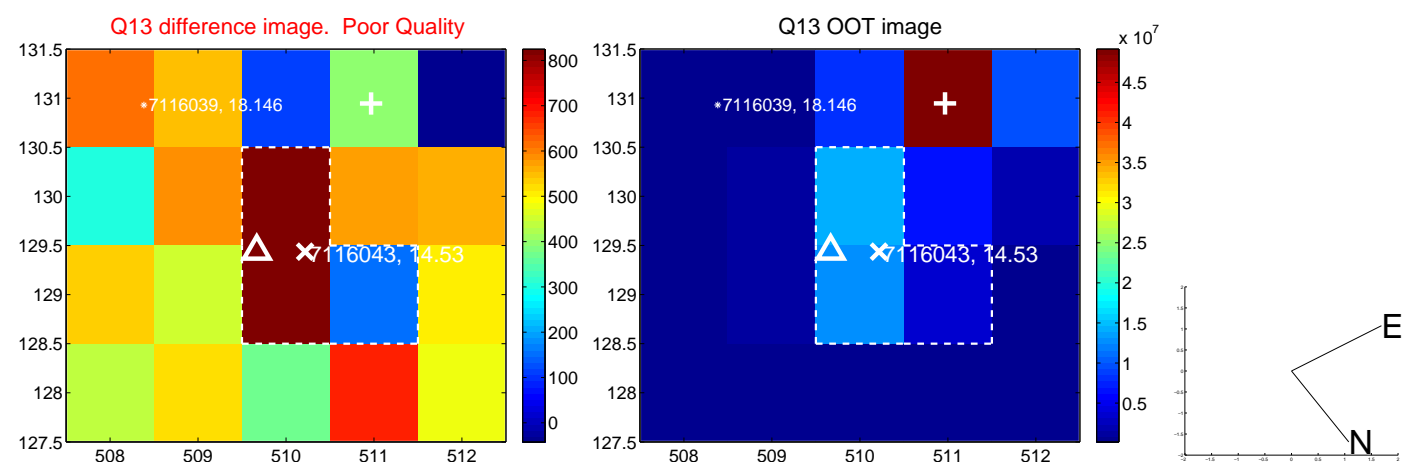
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



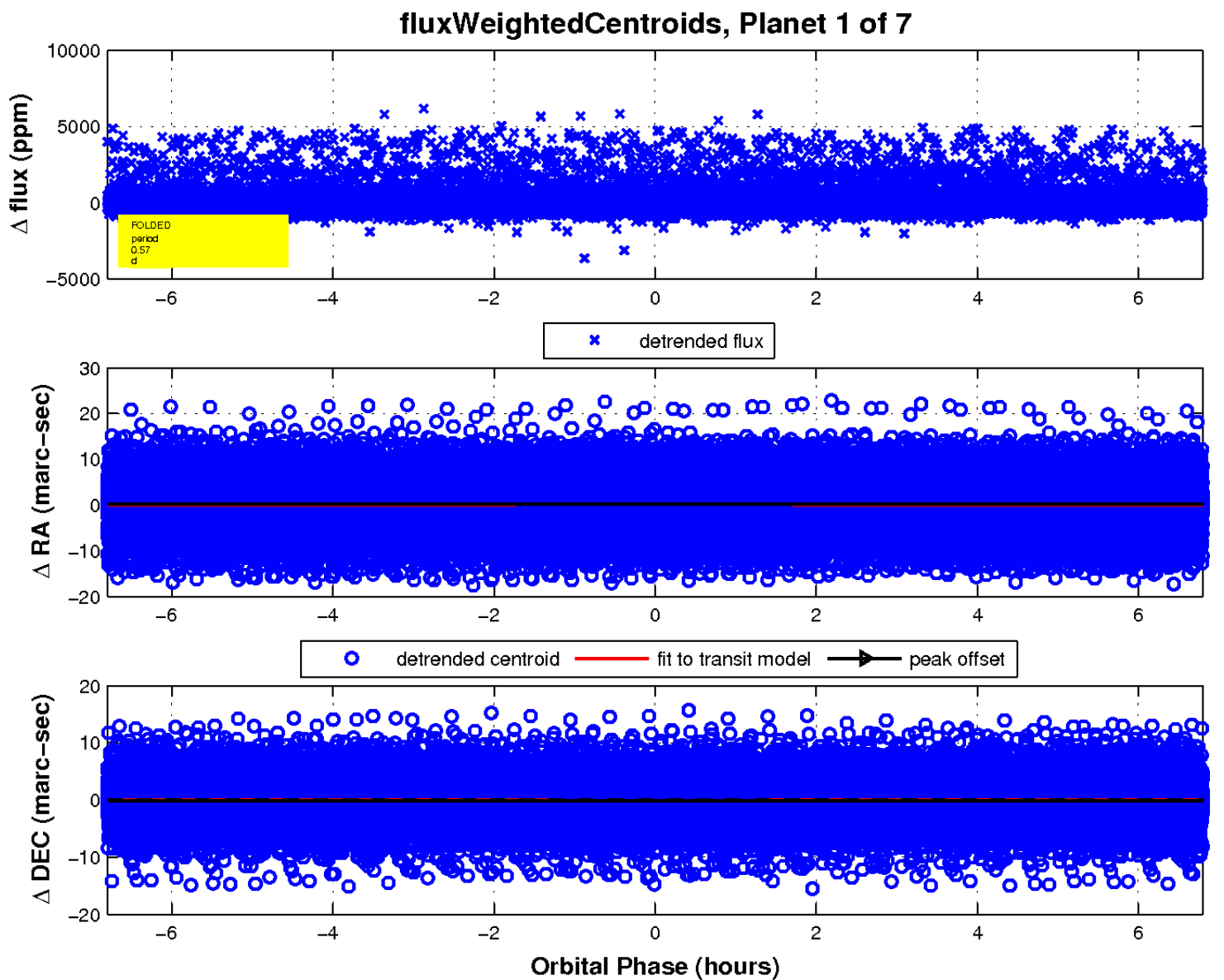
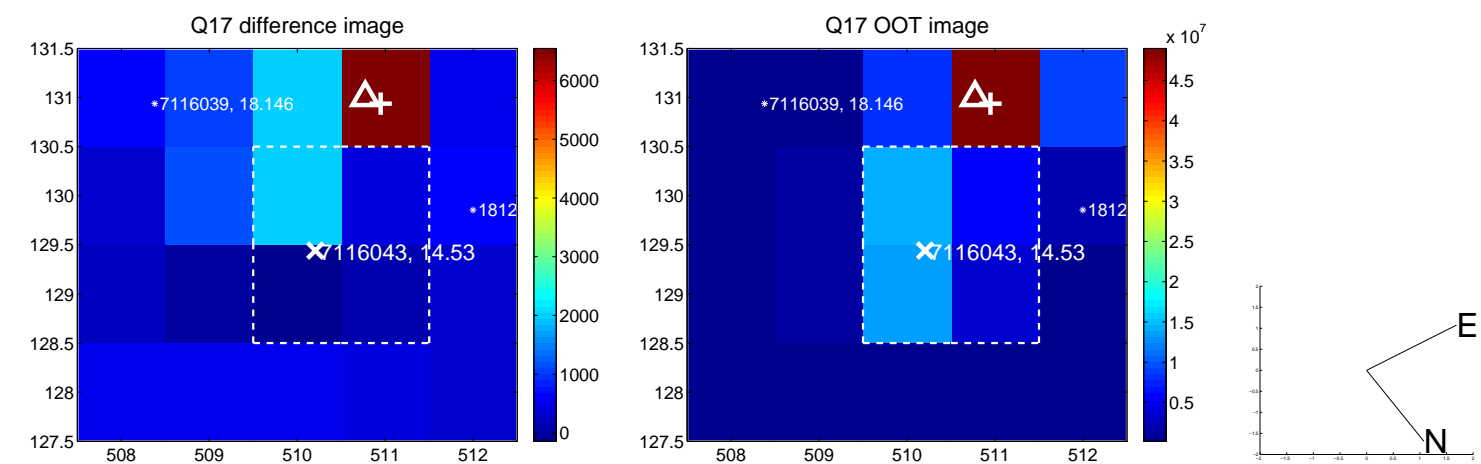
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



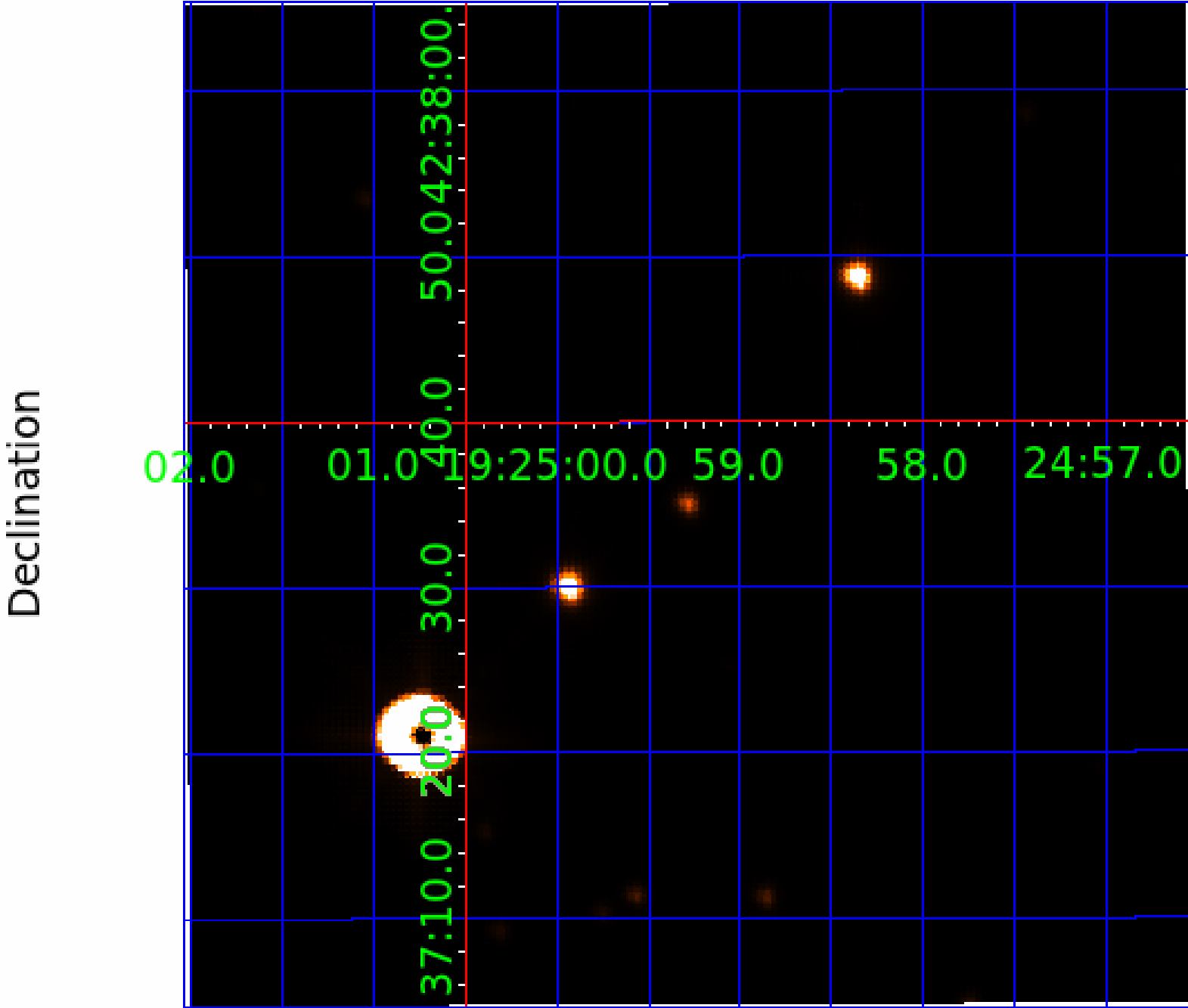
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 007116043

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})
007116043-01	OBS	6826.01	0.566776	131.845856	42.4	3.909	11.5	13.0	1.13	5576	0.76	6499.31
007116043-03	OBS	No	37.317954	146.597466	2842.0	1.841	10.6	8.0	1.13	5576	6.53	24.45
007116043-05	OBS	No	37.994544	166.125687	3934.9	3.182	11.3	8.4	1.13	5576	9.13	23.87
007116043-06	OBS	No	7.372257	132.336098	2150.6	2.855	10.3	9.5	1.13	5576	9.84	212.46
007116043-07	OBS	No	18.974014	149.582936	3458.6	2.102	10.8	8.8	1.13	5576	11.83	60.24

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007116043-01	OBS	FP	0.00	0	0	1	1	CENT_FEW_DIFFS—HALO_GHOST—EPHEM_MATCH
007116043-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_TER_ALT—MOD_POS_ALT—CENT_RESOLVED_OFFSET
007116043-05	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_POS_ALT—CENT_RESOLVED_OFFSET—HALO_GHOST
007116043-06	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_DV—MOD_TER_ALT—MOD_POS_ALT—CENT_RESOLVED_OFFSET
007116043-07	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—CENT_RESOLVED_OFFSET—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.

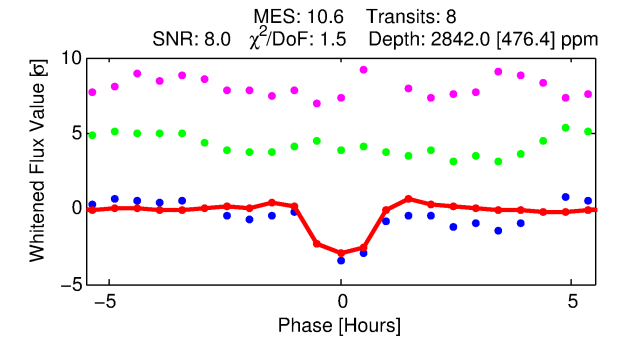
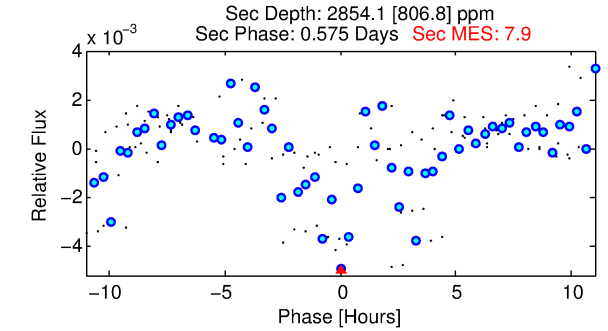
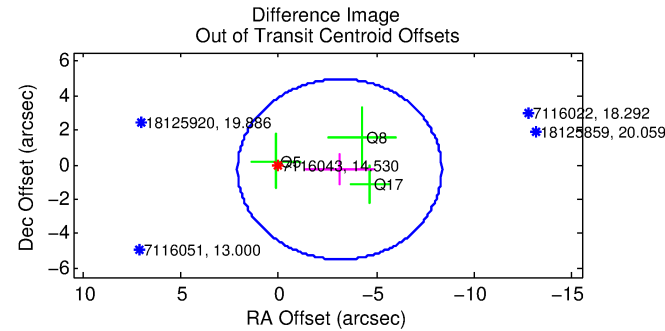
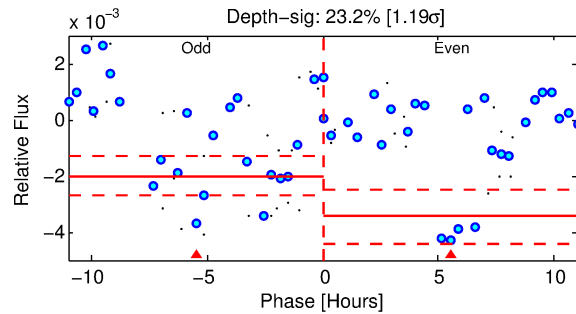
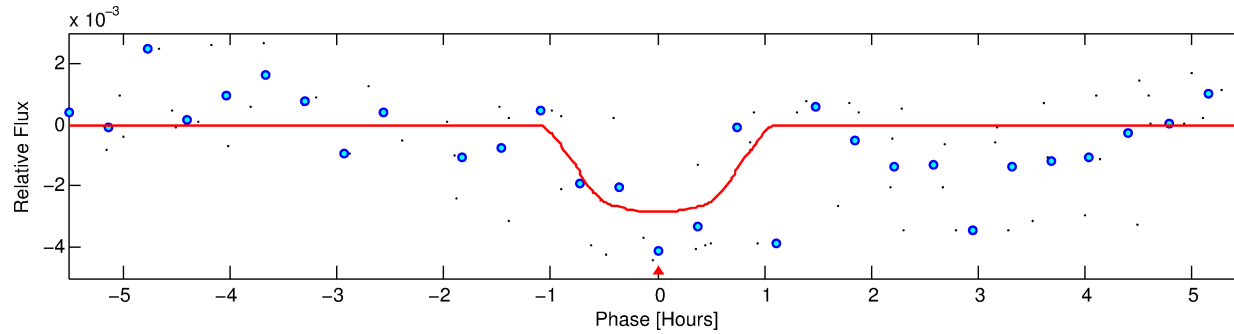
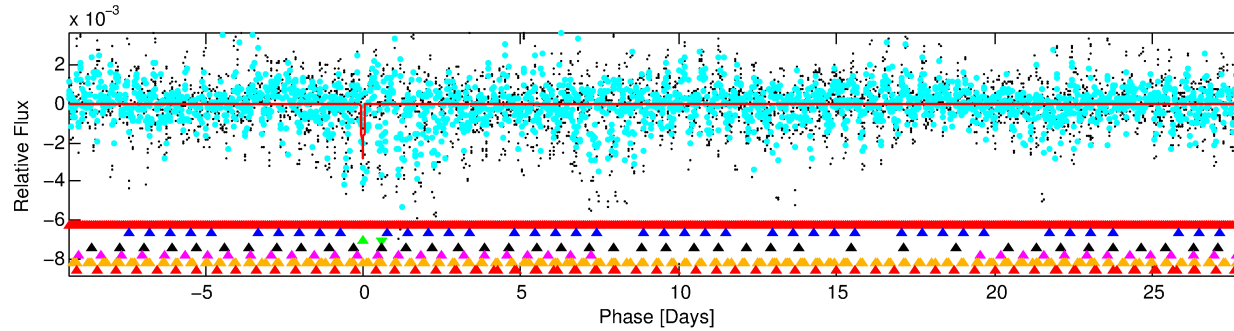
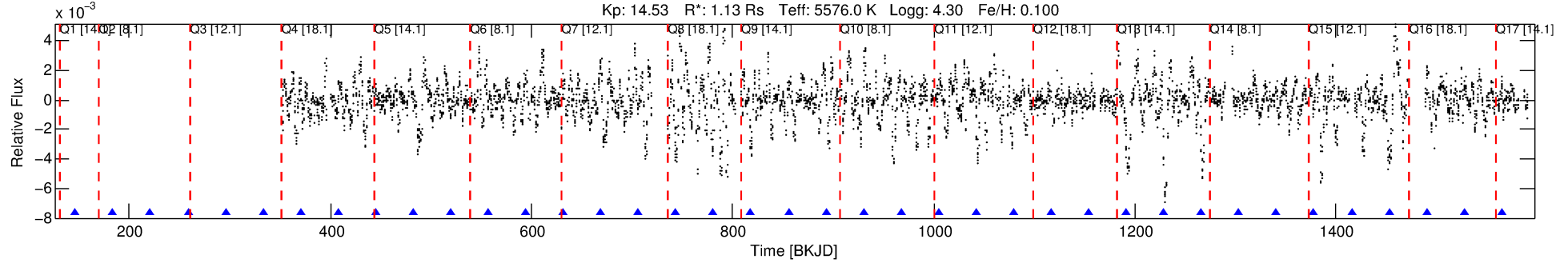
Ephemeris Match Information For 007116043-03

No Significant Match Found

DV One-Page Summary

KIC: 7116043 Candidate: 3 of 7 Period: 37.318 d
KOI: K06826 Corr: No Ephemeris Match

Kp: 14.53 R*: 1.13 Rs Teff: 5576.0 K Logg: 4.30 Fe/H: 0.100



DV Fit Results:

Period = 37.31795 [0.00045] d
Epoch = 146.5975 [0.0101] BKJD
Rp/R* = 0.0529 [0.1063]
a/R* = 117.54 [941.81]
b = 0.73 [5.26]
Seff = 24.45 [9.18]
Teq = 567 [53] K
Rp = 6.53 [13.25] Re
a = 0.2131 [0.0507] AU
Ag = 1670.37 [6755.41] [0.25σ]
Teffp = 5604 [5648] K [0.89σ]

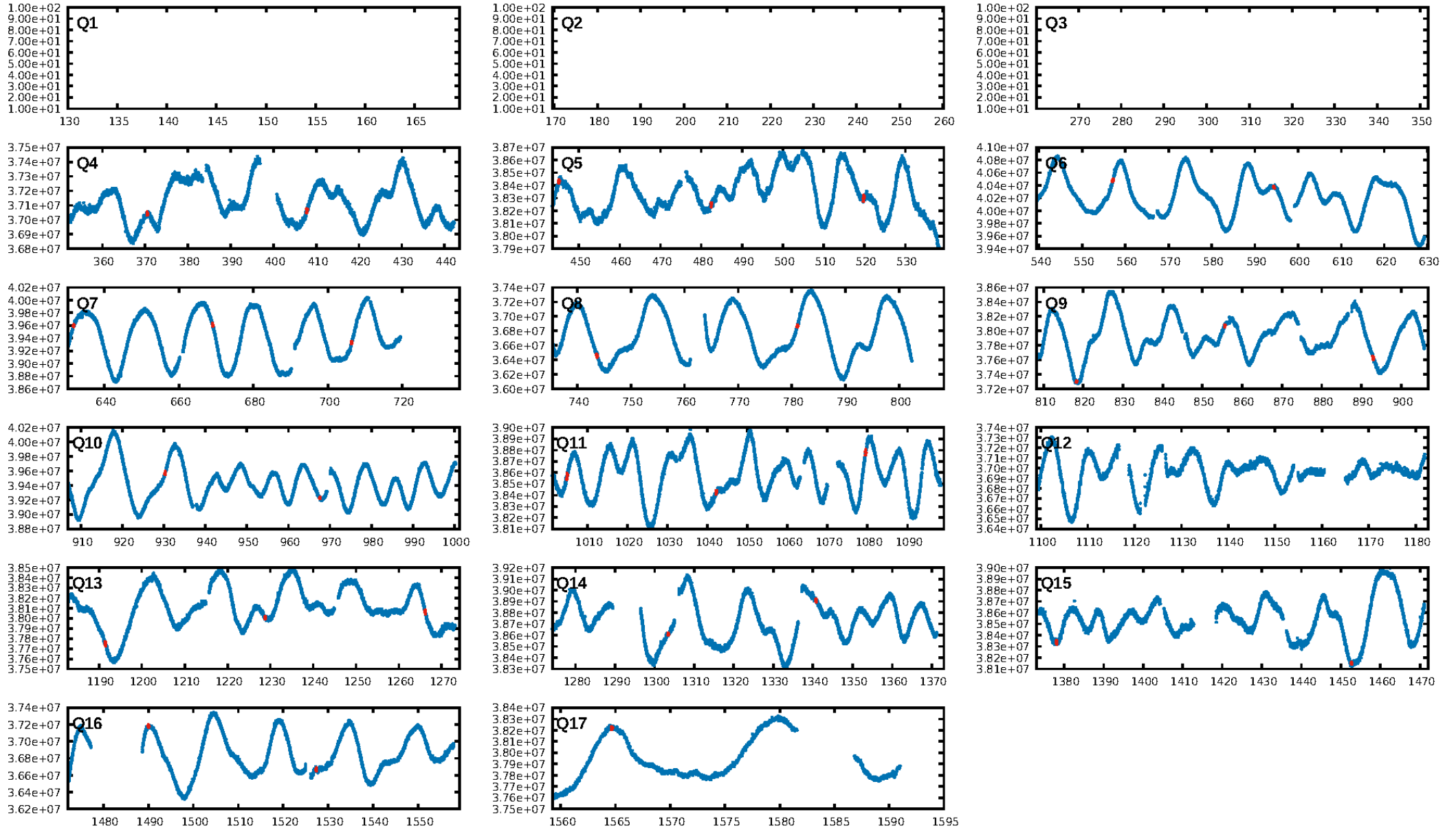
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [14.25σ]
LongPeriod-sig: 100.0% [4.42σ]
ModelChiSquare2-sig: 16.7%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [8/8]
GhostDiagnostic-chr: -2.437
Centroid-sig: 4.6%
Centroid-so: 3.060 arcsec [27.55σ]
OotOffset-rm: 3.134 arcsec [1.80σ]
KicOffset-rm: 4.116 arcsec [2.70σ]
OotOffset-st: 0/0/1/2 [3]
KicOffset-st: 0/0/1/2 [3]
DiffImageQuality-fgm: 0.33 [1/3]
DiffImageOverlap-fno: 0.00 [0/13]

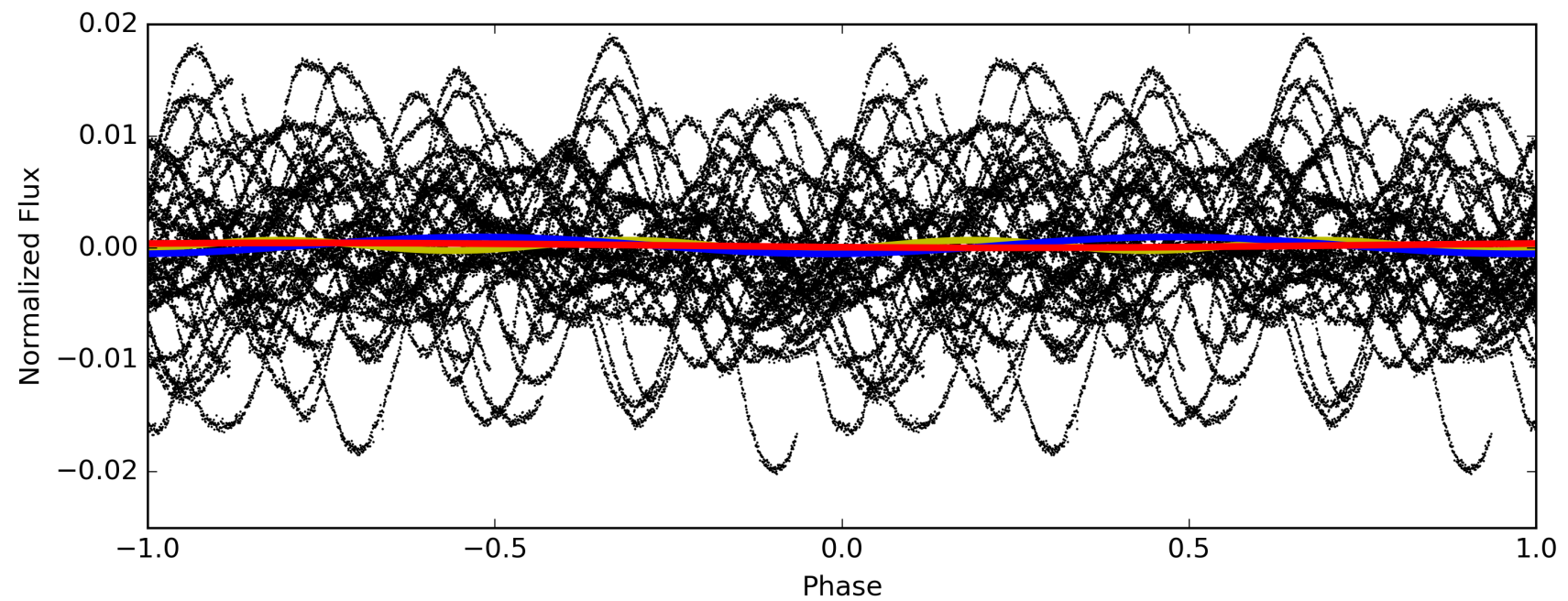
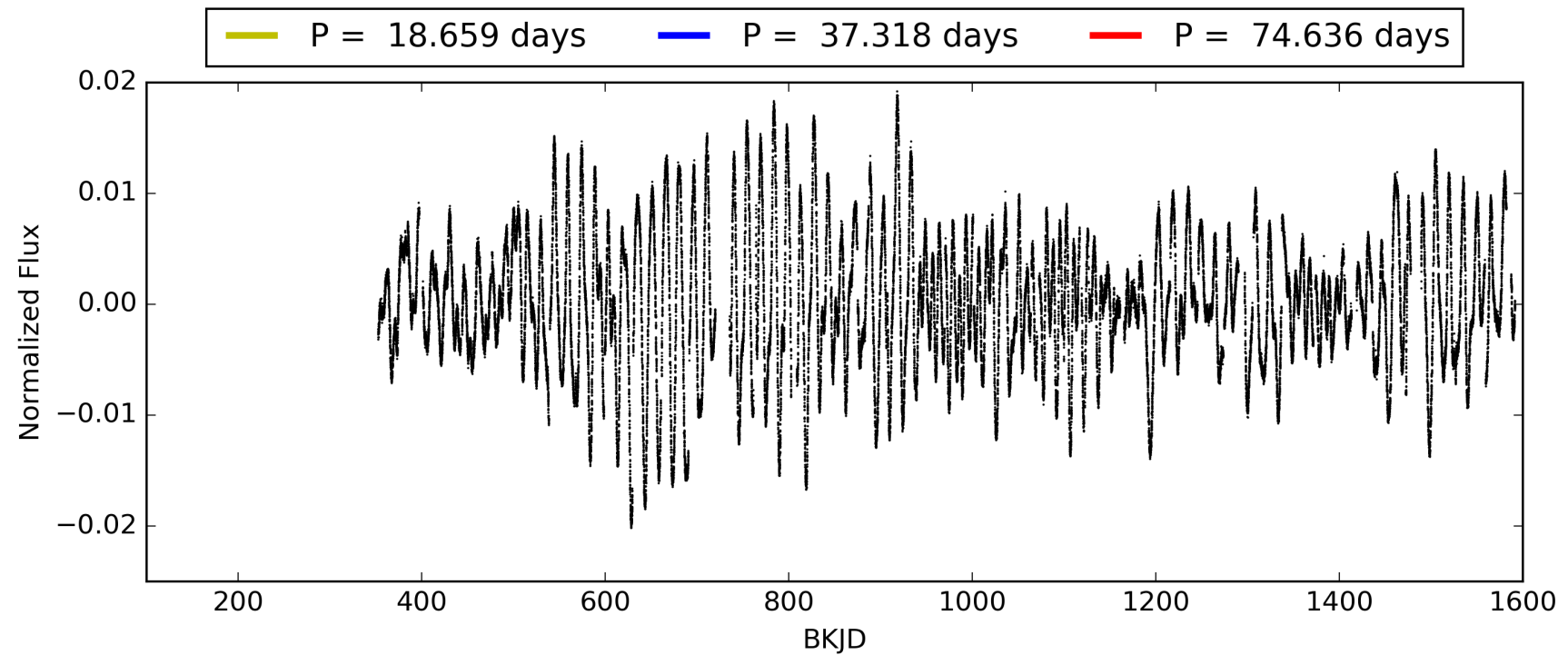
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 15:04:46 Z

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

TCE 007116043-03, PDC Light Curves

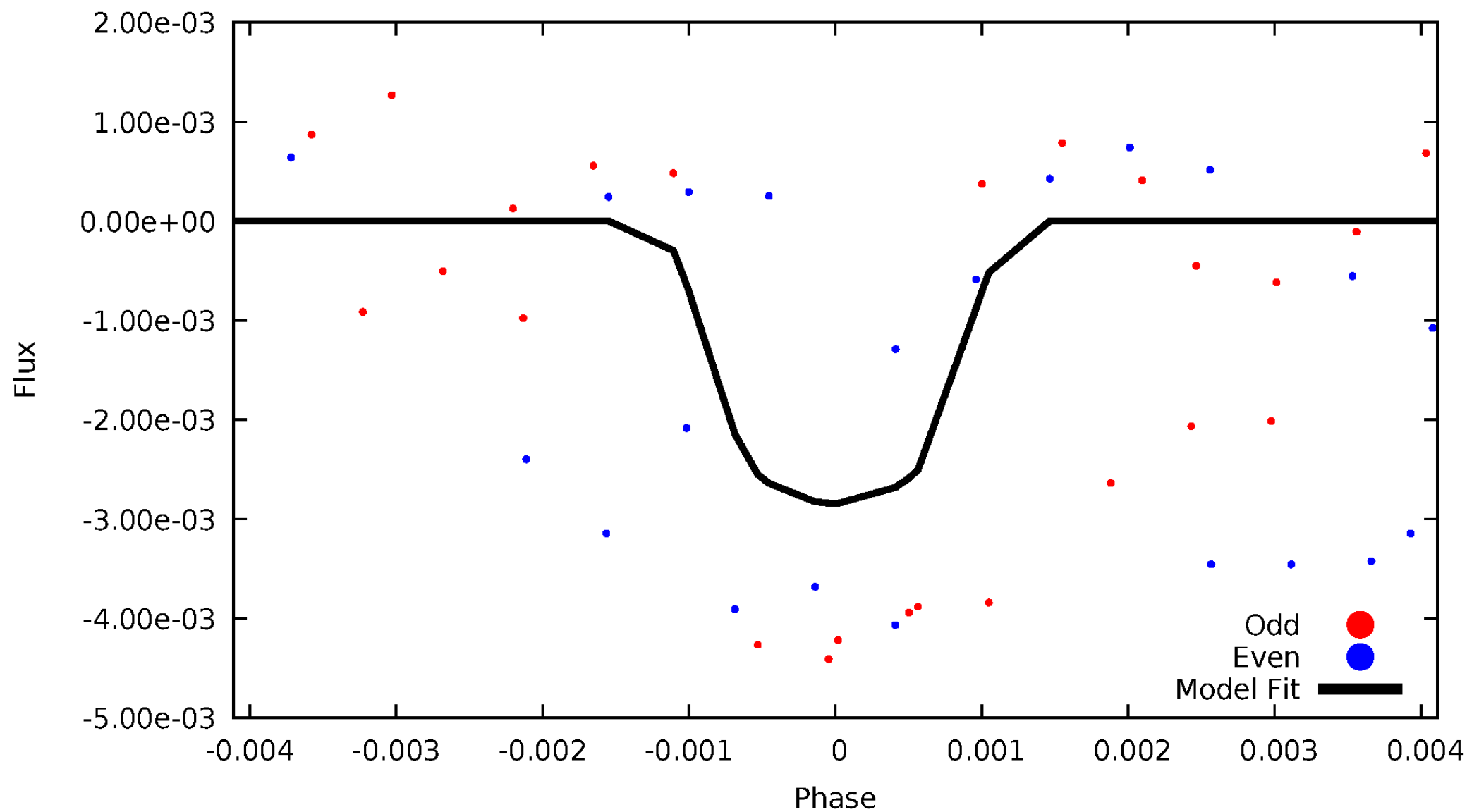


TCE 007116043-03



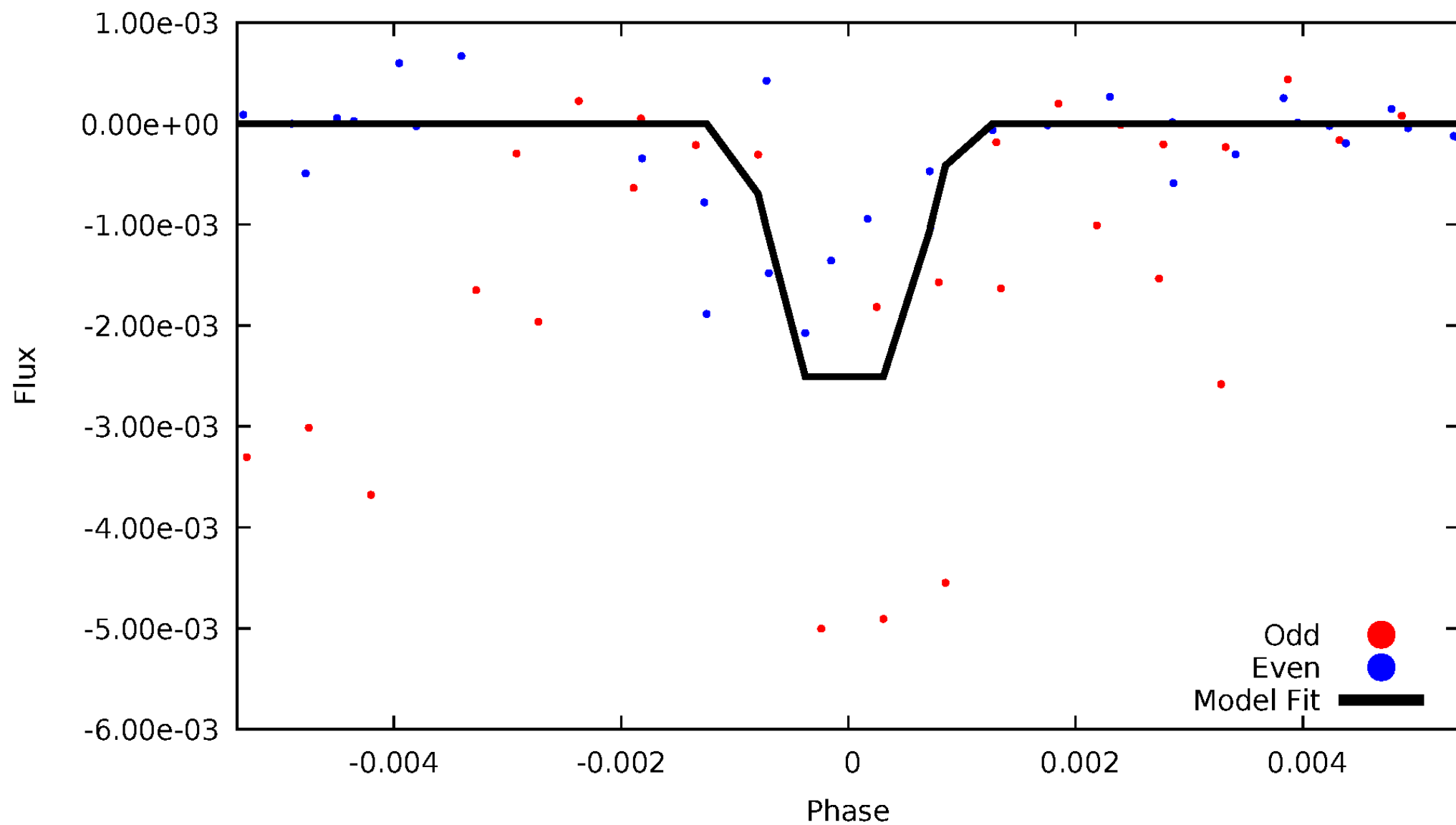
DV Odd/Even

TCE 007116043-03



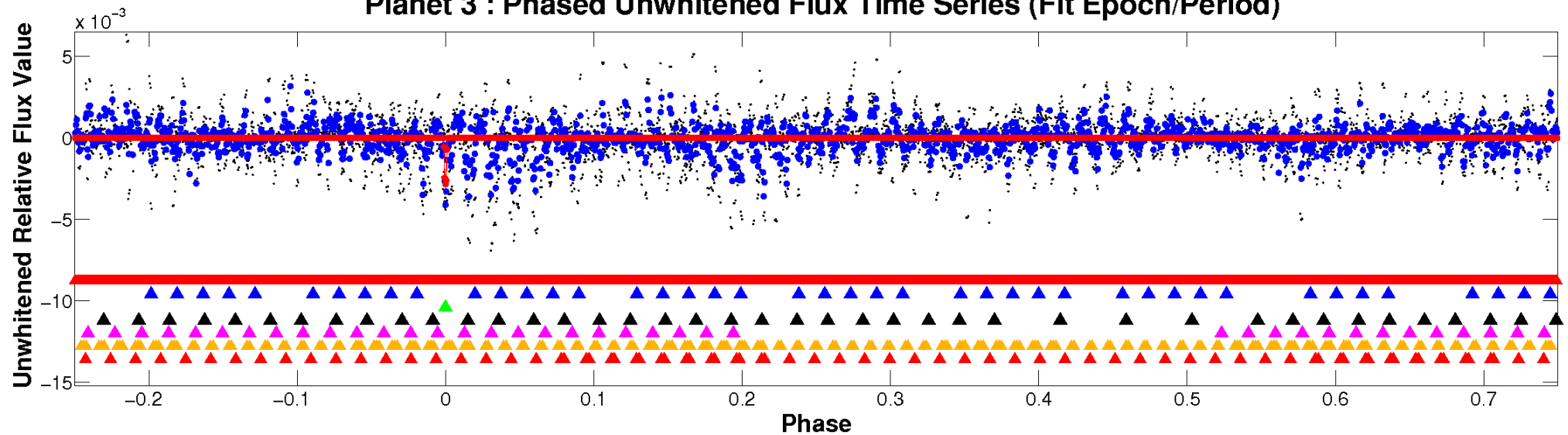
ALT Odd/Even

TCE 007116043-03

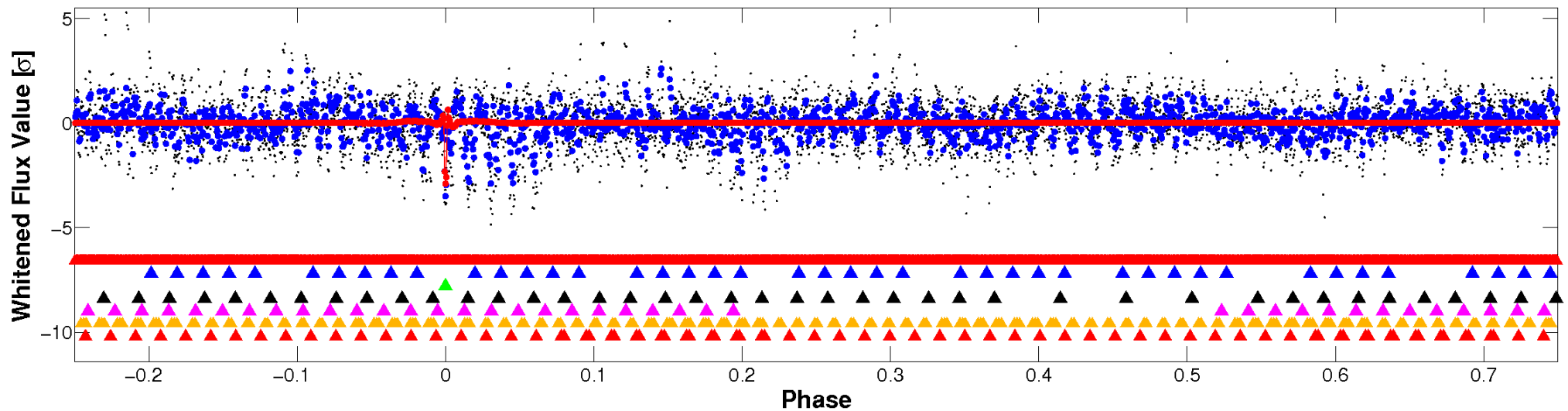


Non-Whitened Vs. Whitened Light Curve

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

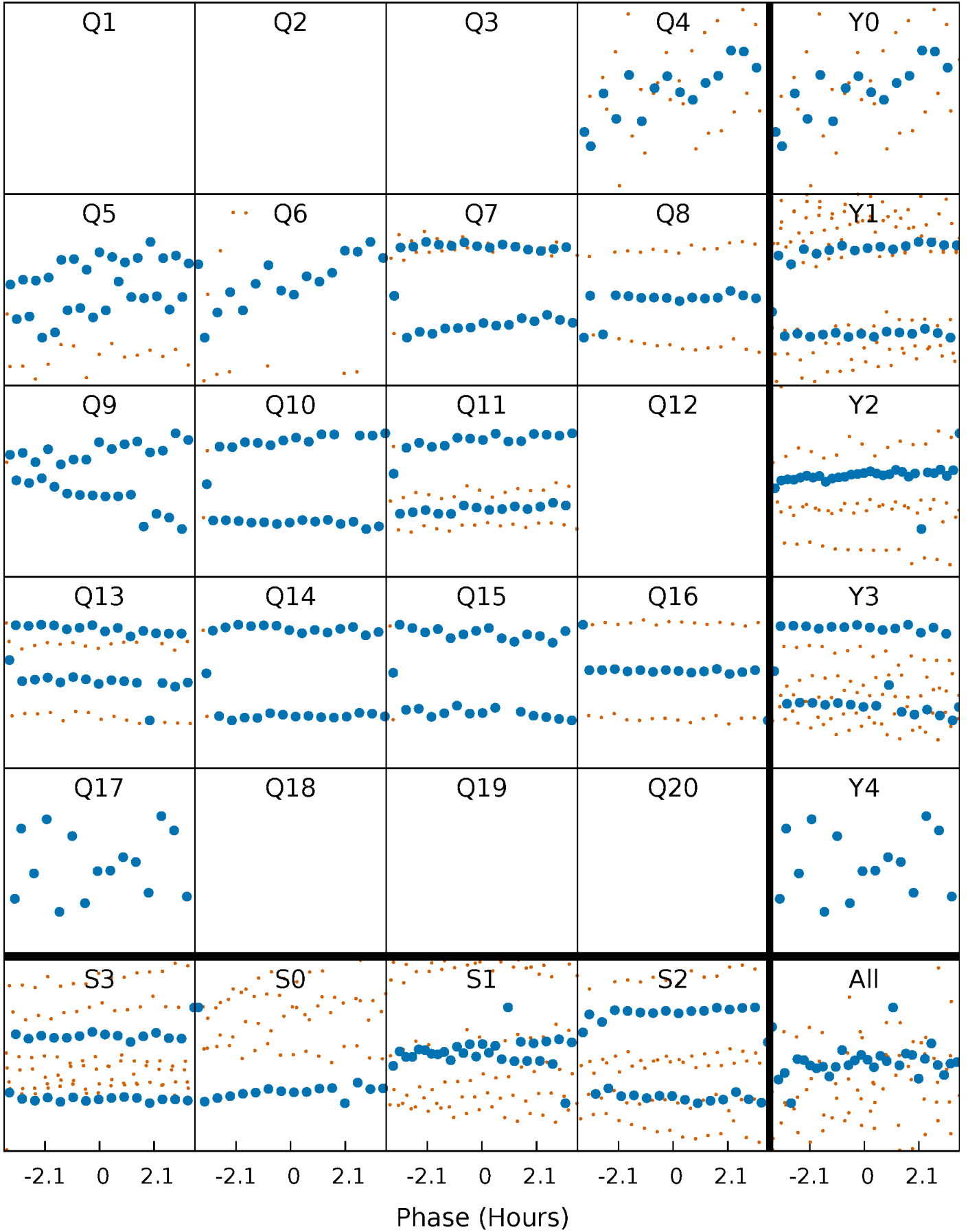


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



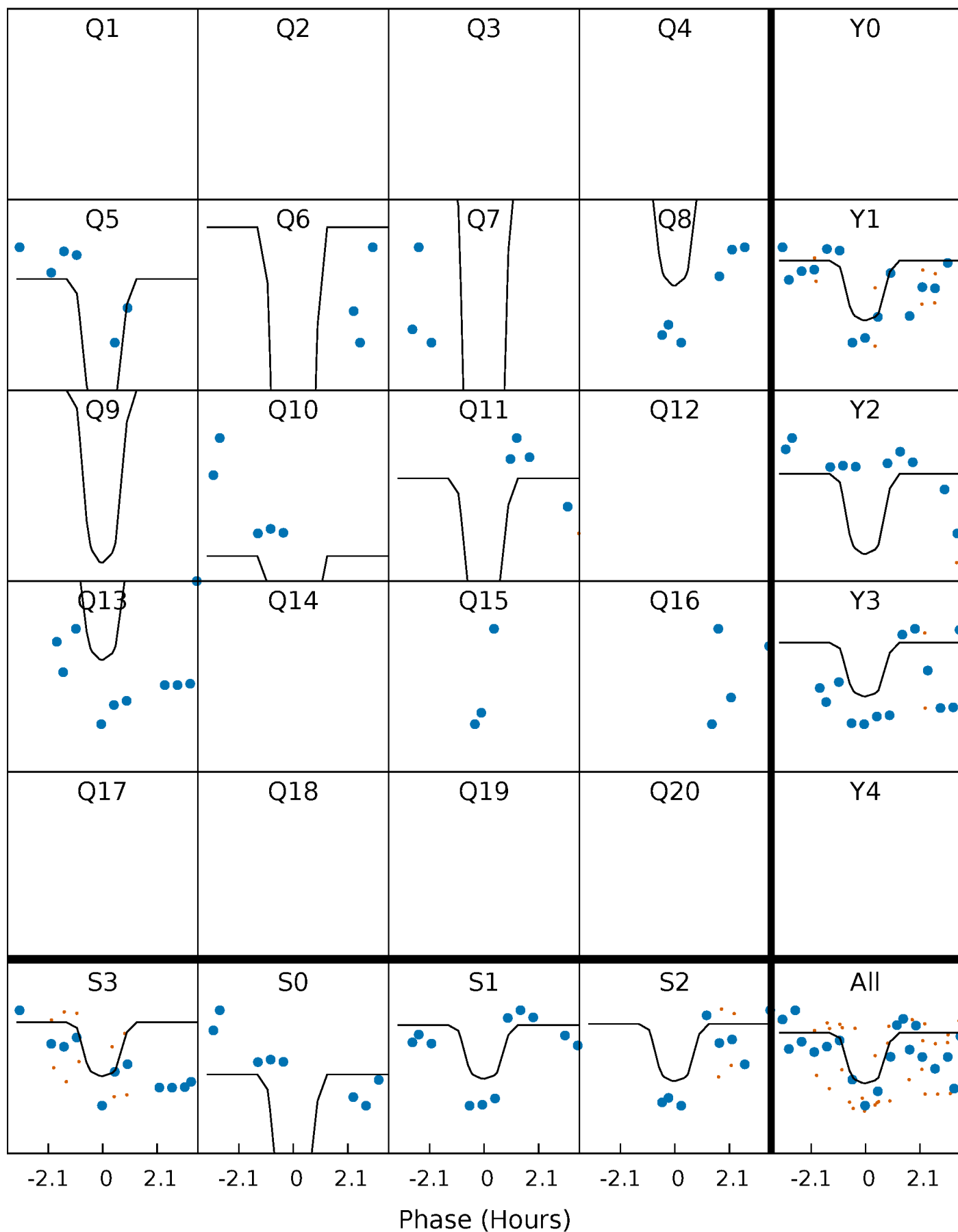
PDC Quarter-Phased Transit Curves

TCE 007116043-03 $P = 37.317954$ Days $T_0 = 146.597466$ (BKJD)



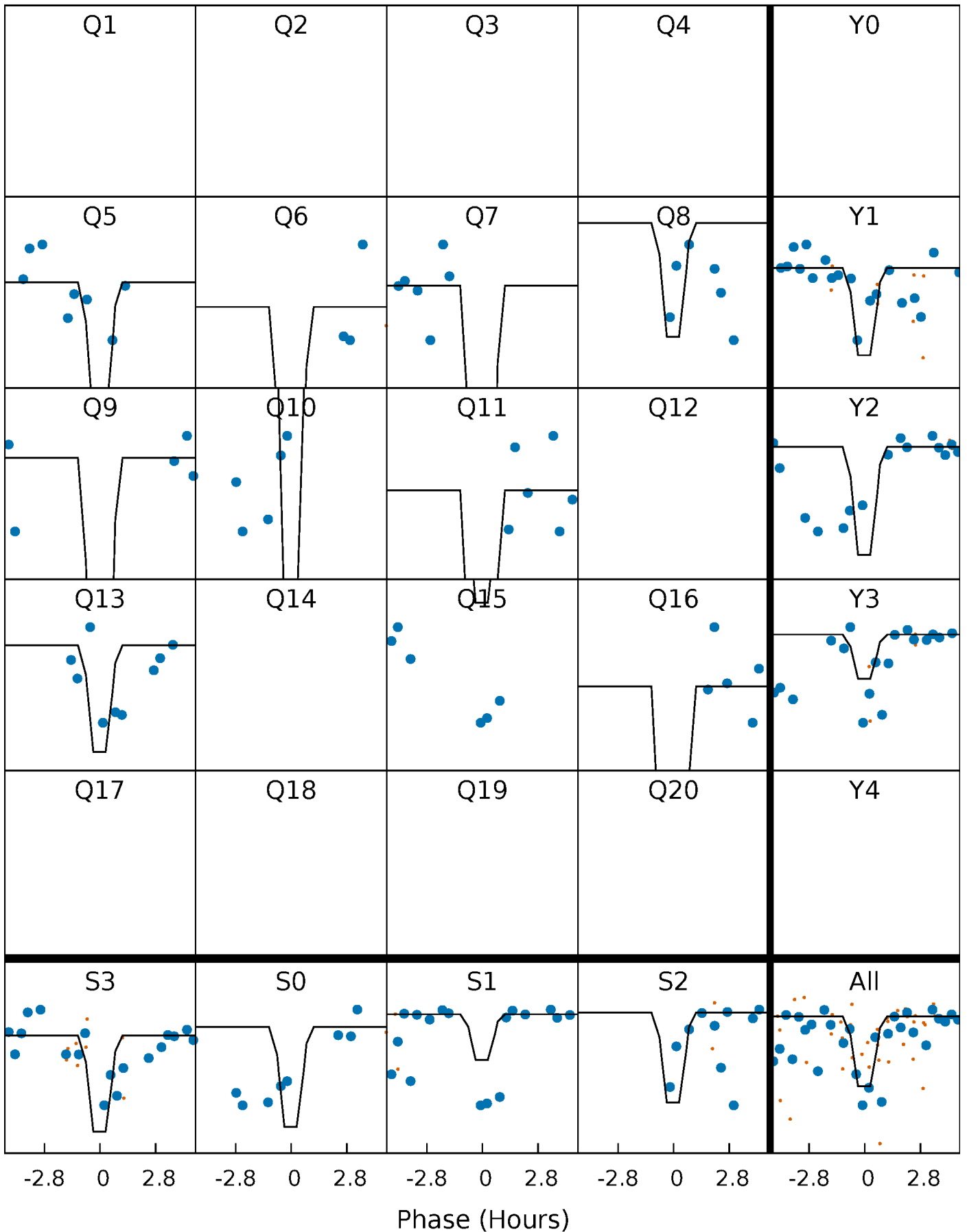
DV Quarter-Phased Transit Curves

TCE 007116043-03 P= 37.317954 Days $T_0=146.597466$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

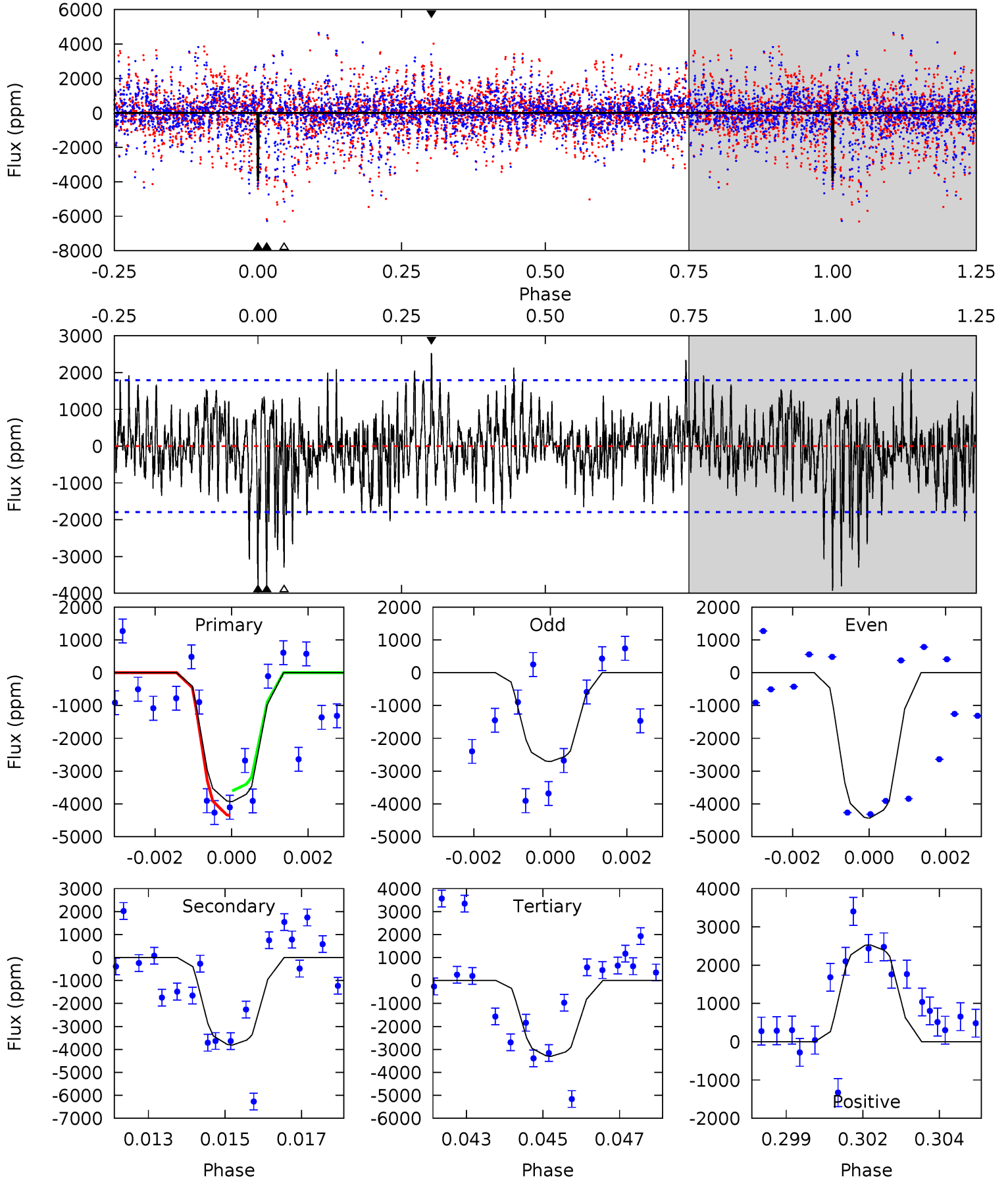
TCE 007116043-03 P= 37.317982 Days $T_0=146.585578$ (BKJD)



DV Model-Shift Uniqueness Test

007116043-03, P = 37.317954 Days, E = 146.597466 Days

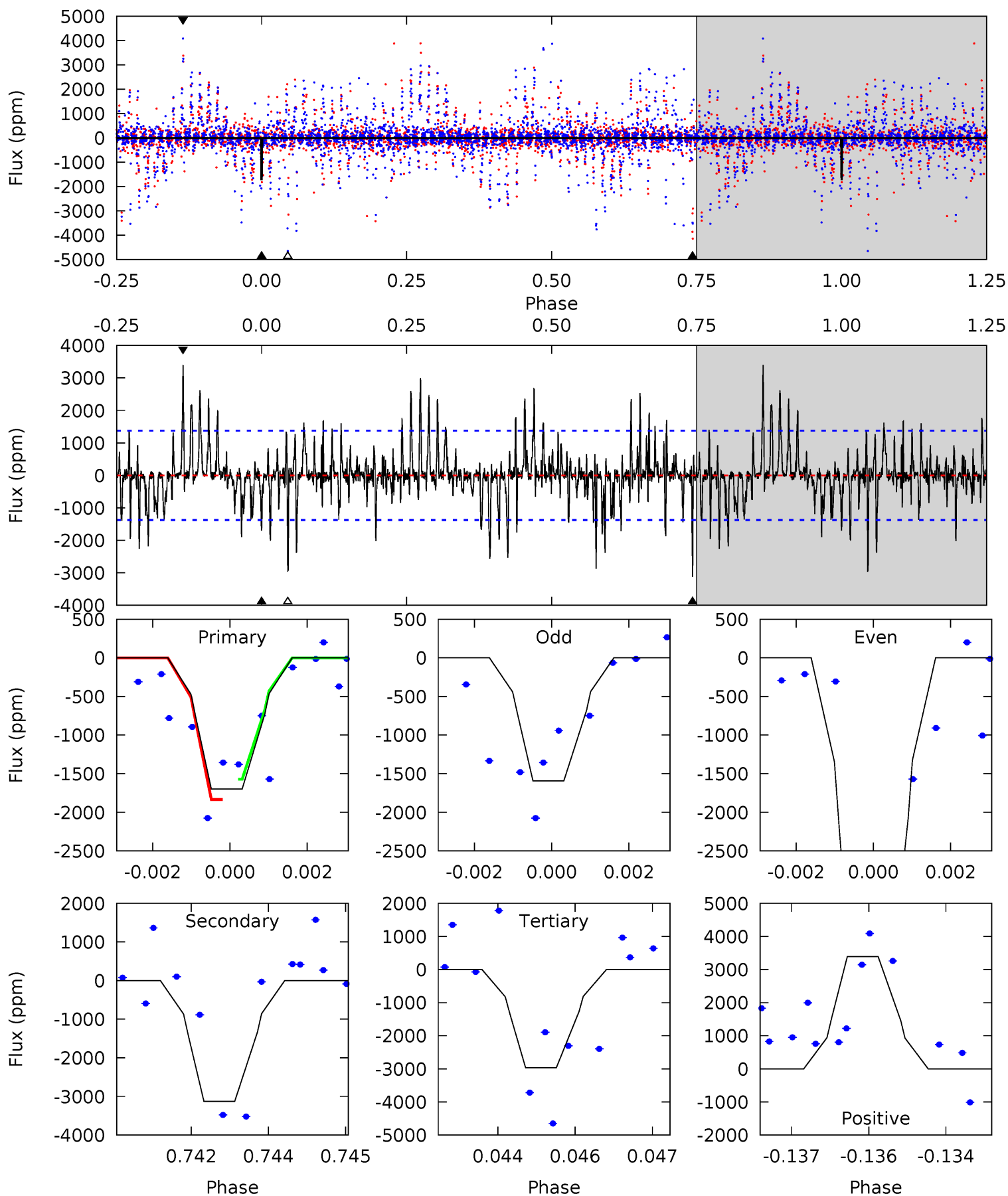
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.6	11.3	9.77	7.50	5.31	3.07	2.10	1.88	4.15	1.51	3.78	2.56	0.68	0.39	1.13



Alt Model-Shift Uniqueness Test

007116043-03, P = 37.317982 Days, E = 146.585578 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.63	12.2	11.6	13.2	5.37	3.16	2.31	-4.93	-6.61	0.64	-1.04	4.32	1.39	0.52	0.50



Stellar Parameters For KIC 007116043

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5576^{+183}_{-183}	$4.297^{+0.195}_{-0.195}$	$0.100^{+0.250}_{-0.300}$	$1.132^{+0.314}_{-0.257}$	$0.928^{+0.115}_{-0.084}$	$0.900^{+0.941}_{-0.466}$
	+3%/-3%	+5%/-5%	+250%/-300%	+28%/-23%	+12%/-9%	+105%/-52%
Source	KIC0	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 007116043-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-3806 ± 337	$11.98^{+11.67}_{-8.03}$	794^{+61}_{-55}	4649^{+3377}_{-1003}	699^{+5784}_{-525}
Alt.	-3128 ± 256	$11.70^{+12.54}_{-7.92}$	799^{+64}_{-58}	4484^{+3355}_{-950}	571^{+5147}_{-432}

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

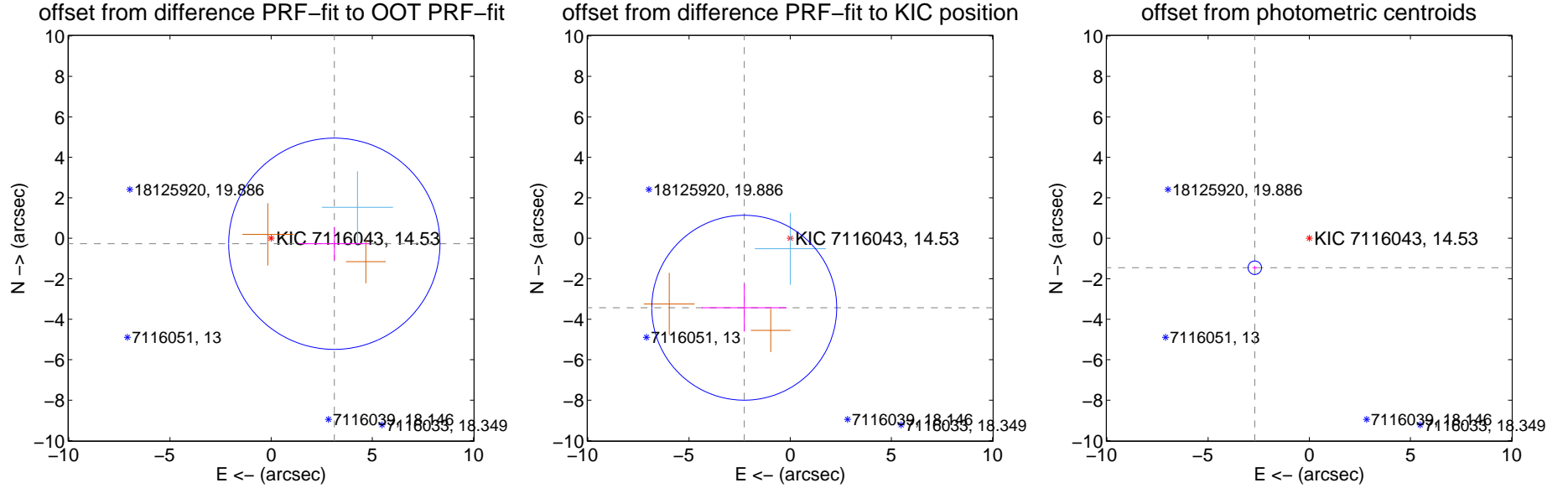
DV Centroid Data

Supplemental centroid analysis for 007116043-03. Kepler magnitude: 14.53. Transit SNR 8.03

There are 1 quarters with good PRF difference image offsets

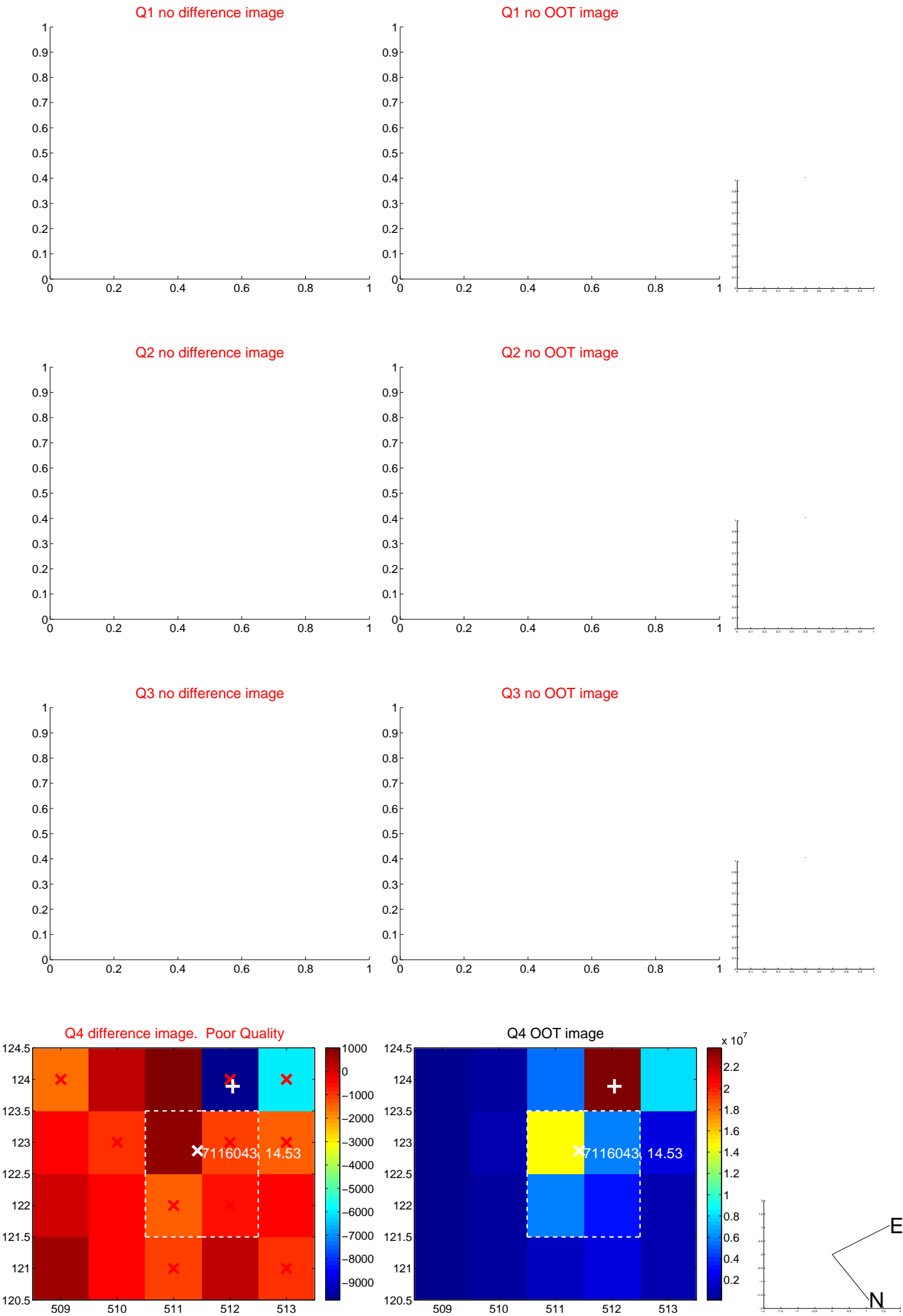
The OOT PRF centroid is offset from the target star catalog position by about 6.59 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	3.134 ± 1.740	1.80	-3.123 ± 1.745	-0.270 ± 0.819
PRF-fit source offset from KIC position	4.116 ± 1.523	2.70	2.272 ± 2.104	-3.432 ± 1.182
photometric centroid source offset	3.06 ± 0.11	27.55	2.69 ± 0.12	-1.46 ± 0.10

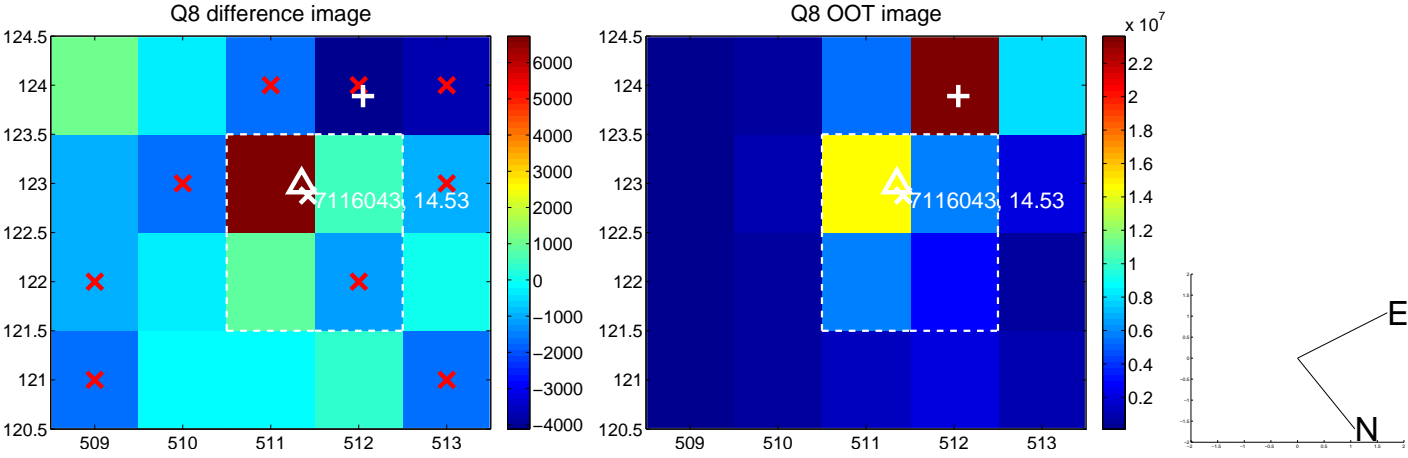
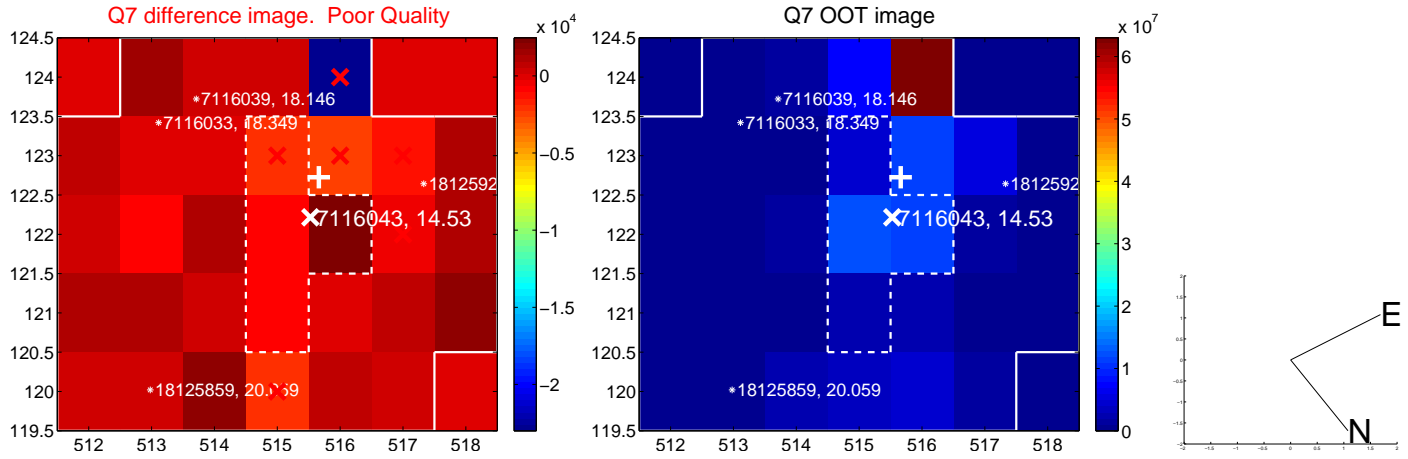
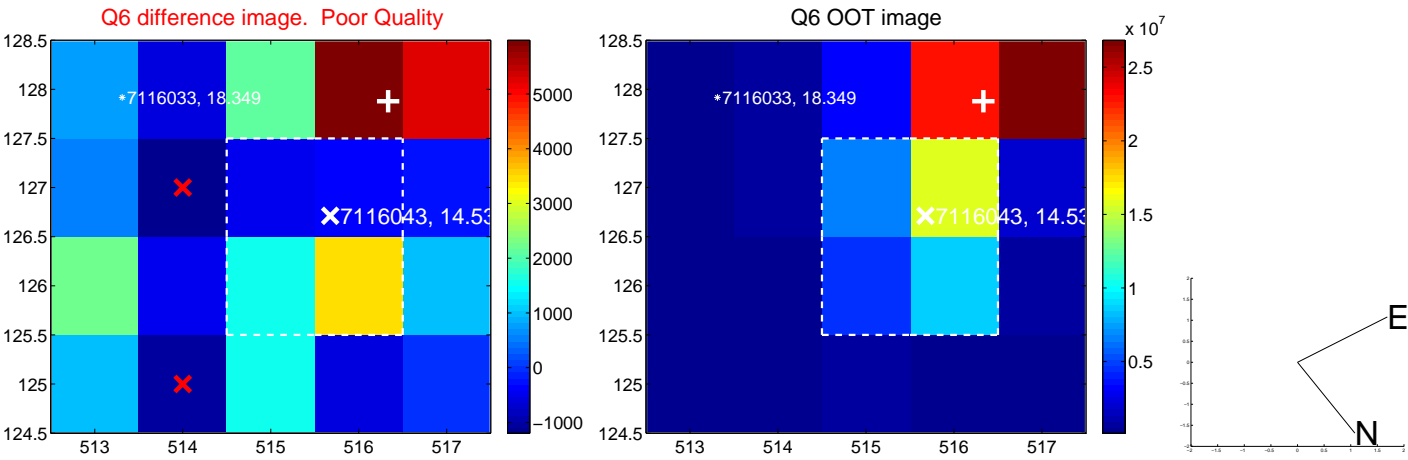
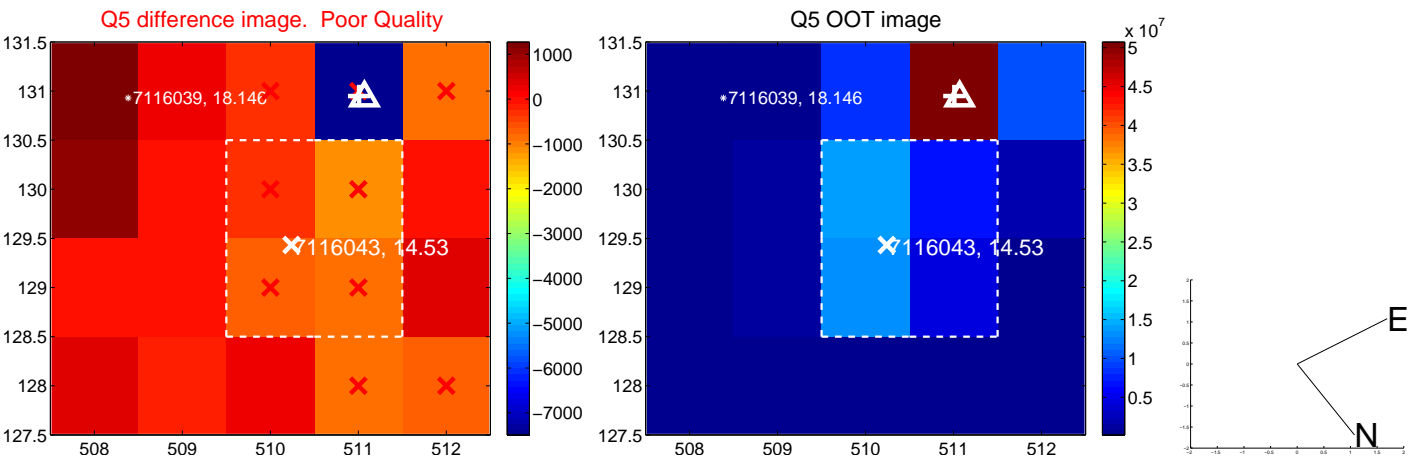


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

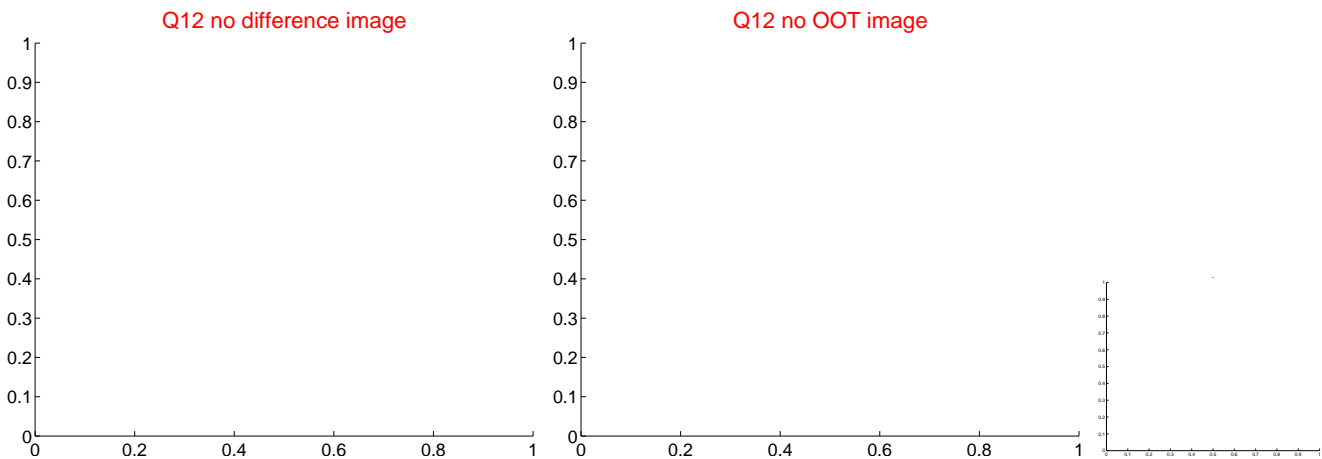
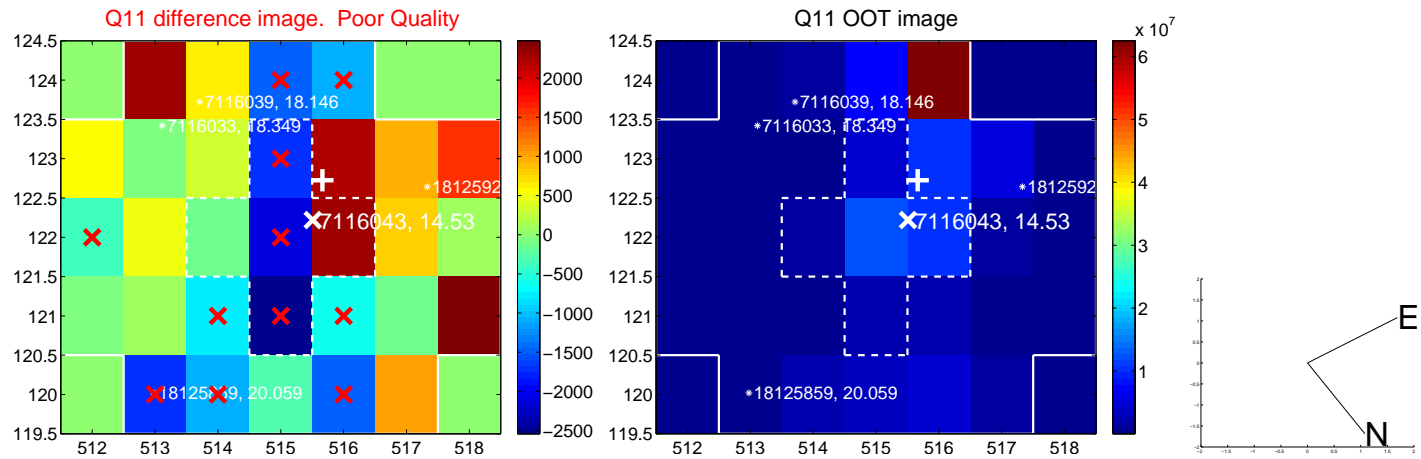
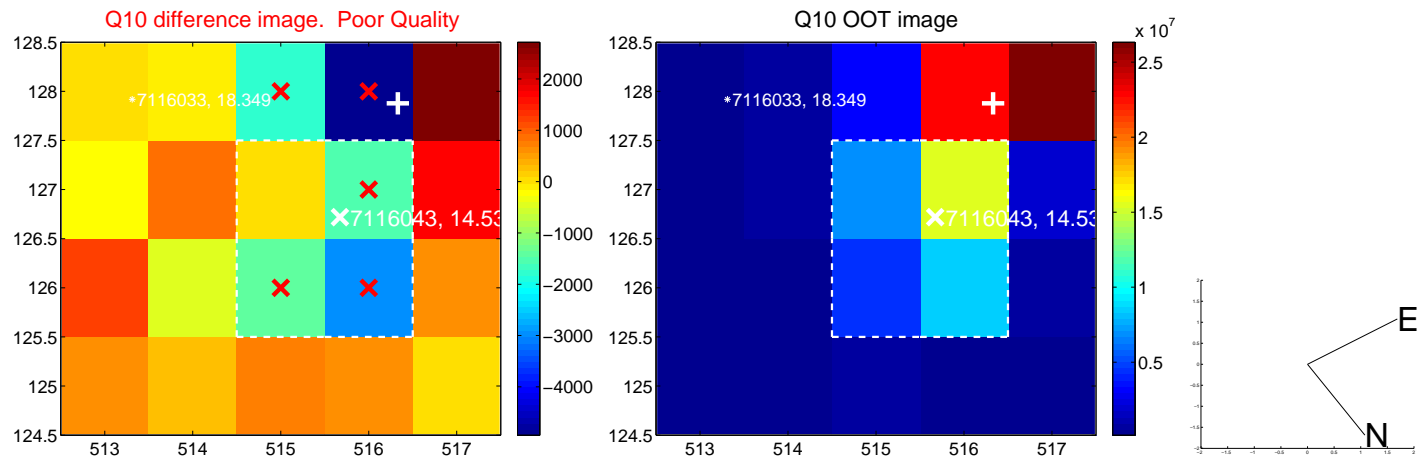
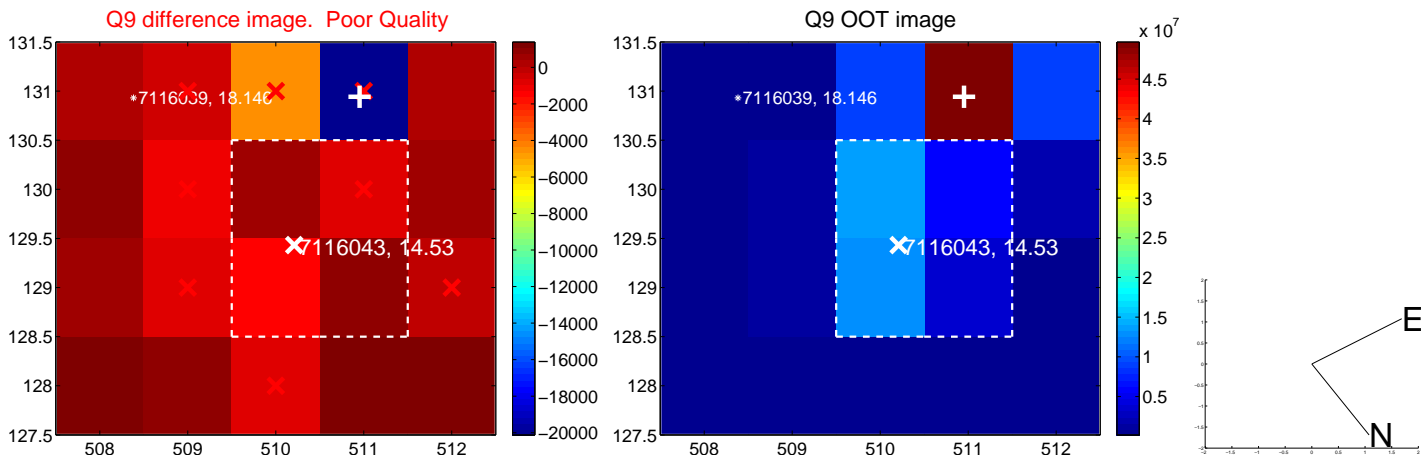
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



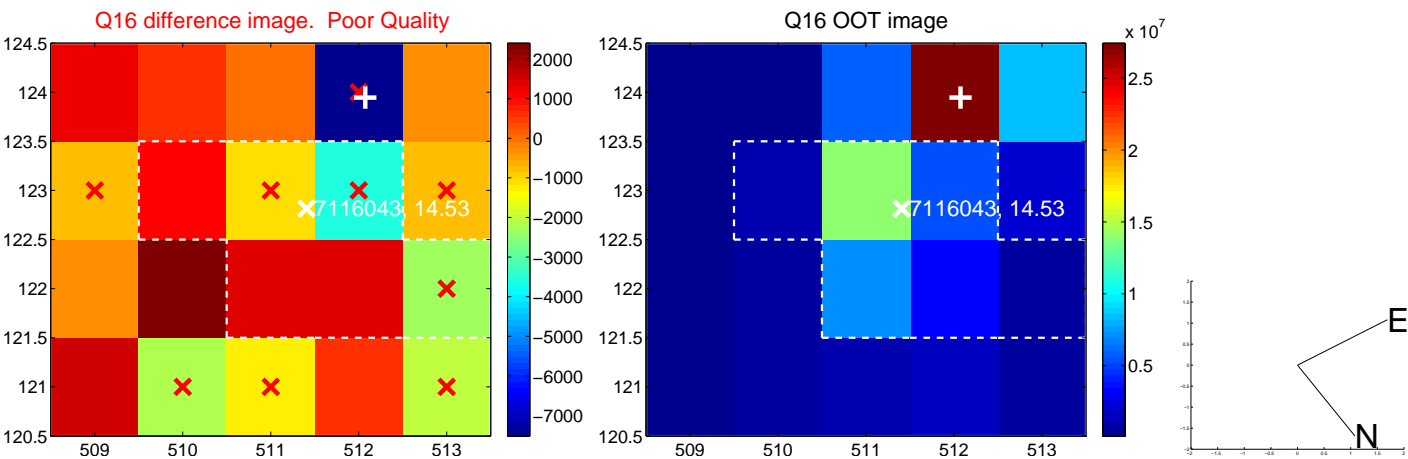
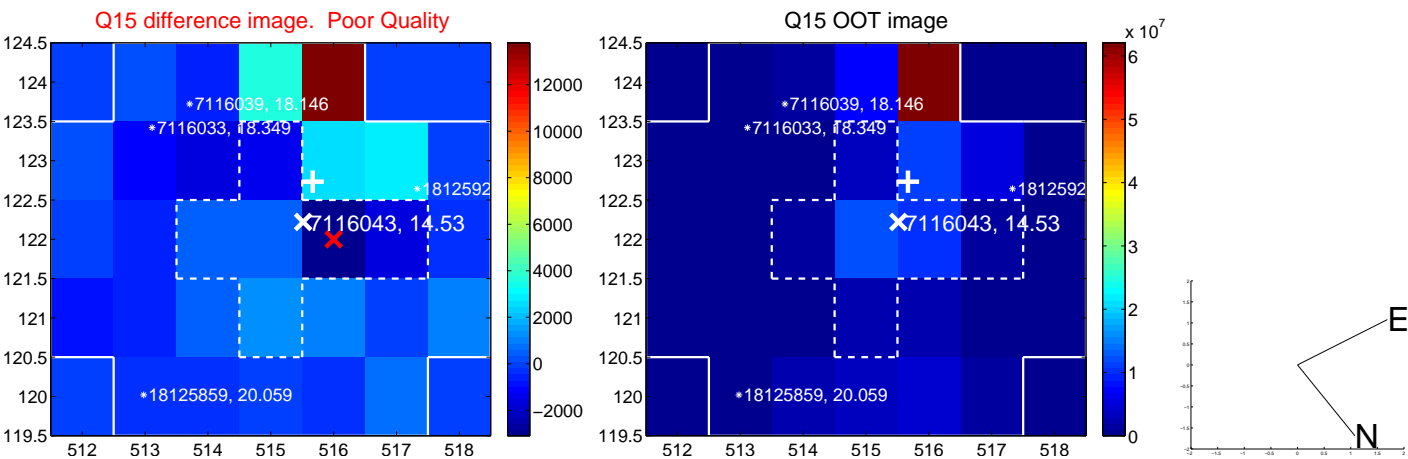
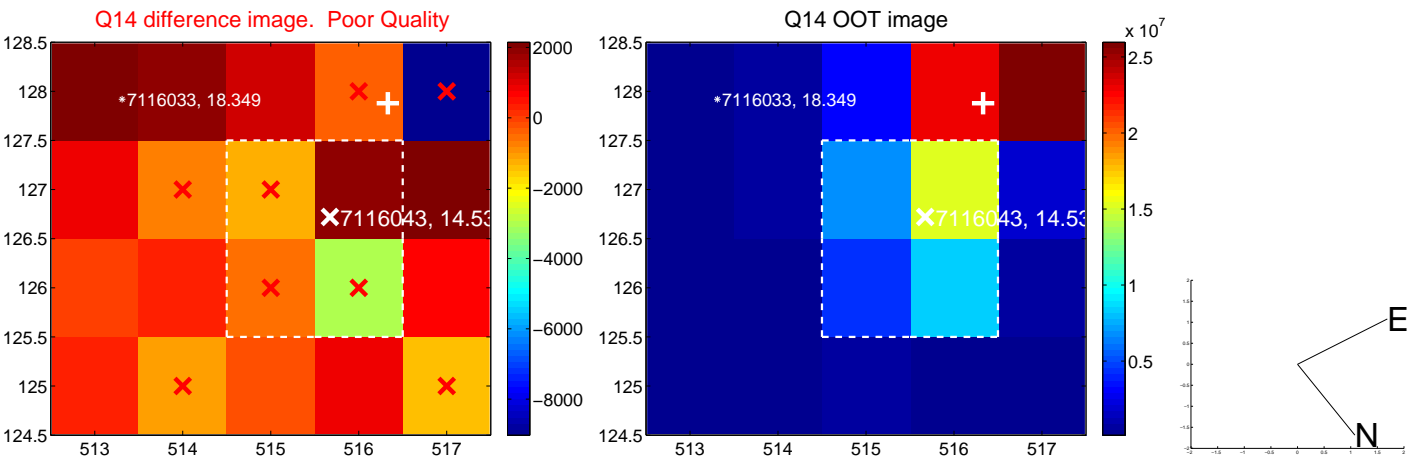
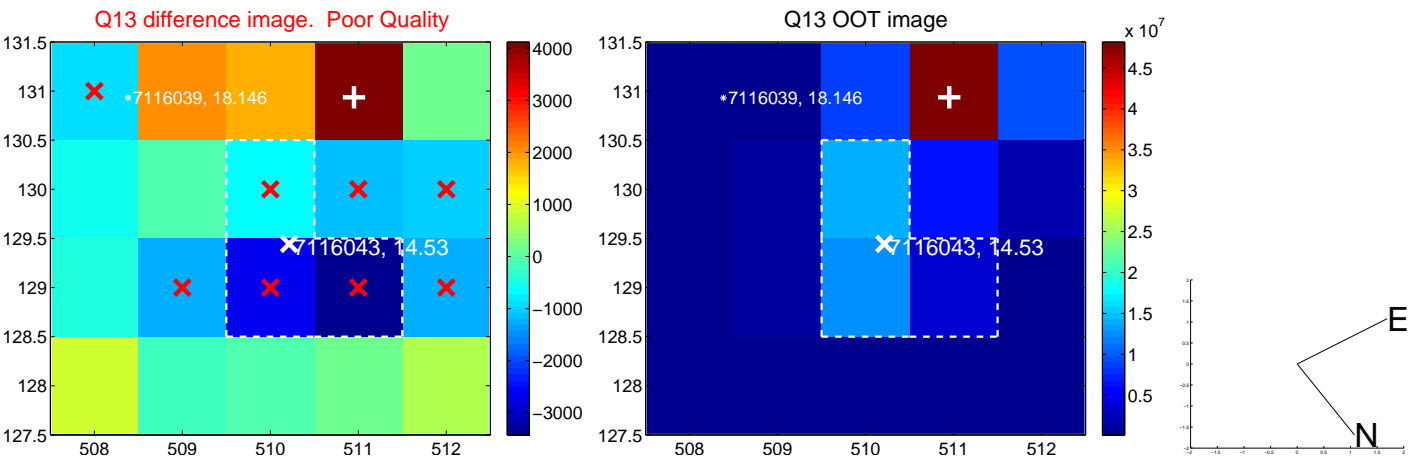
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



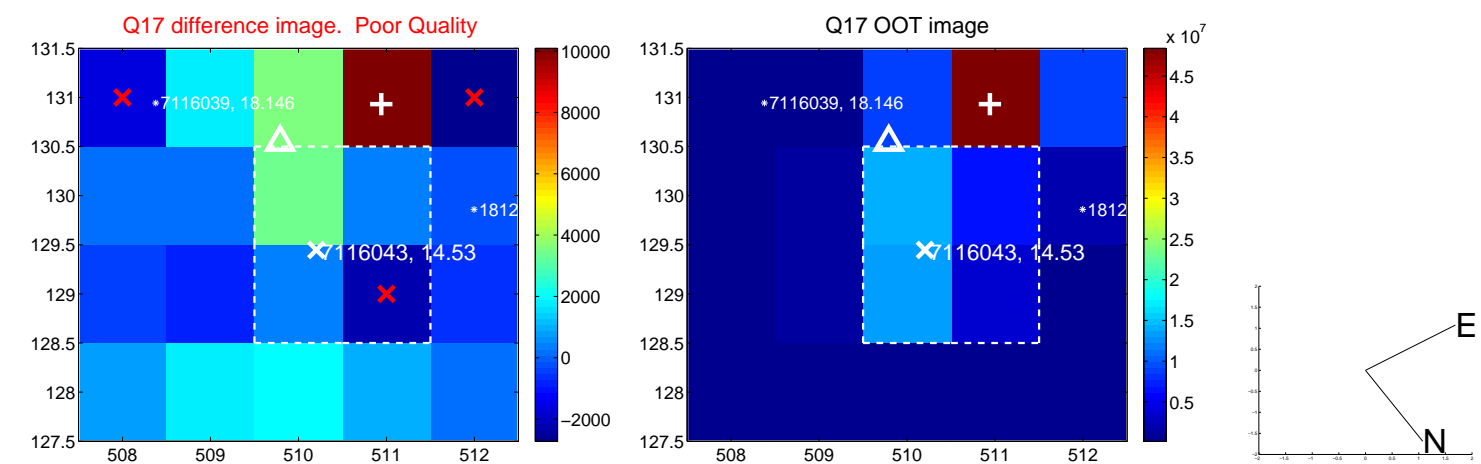
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



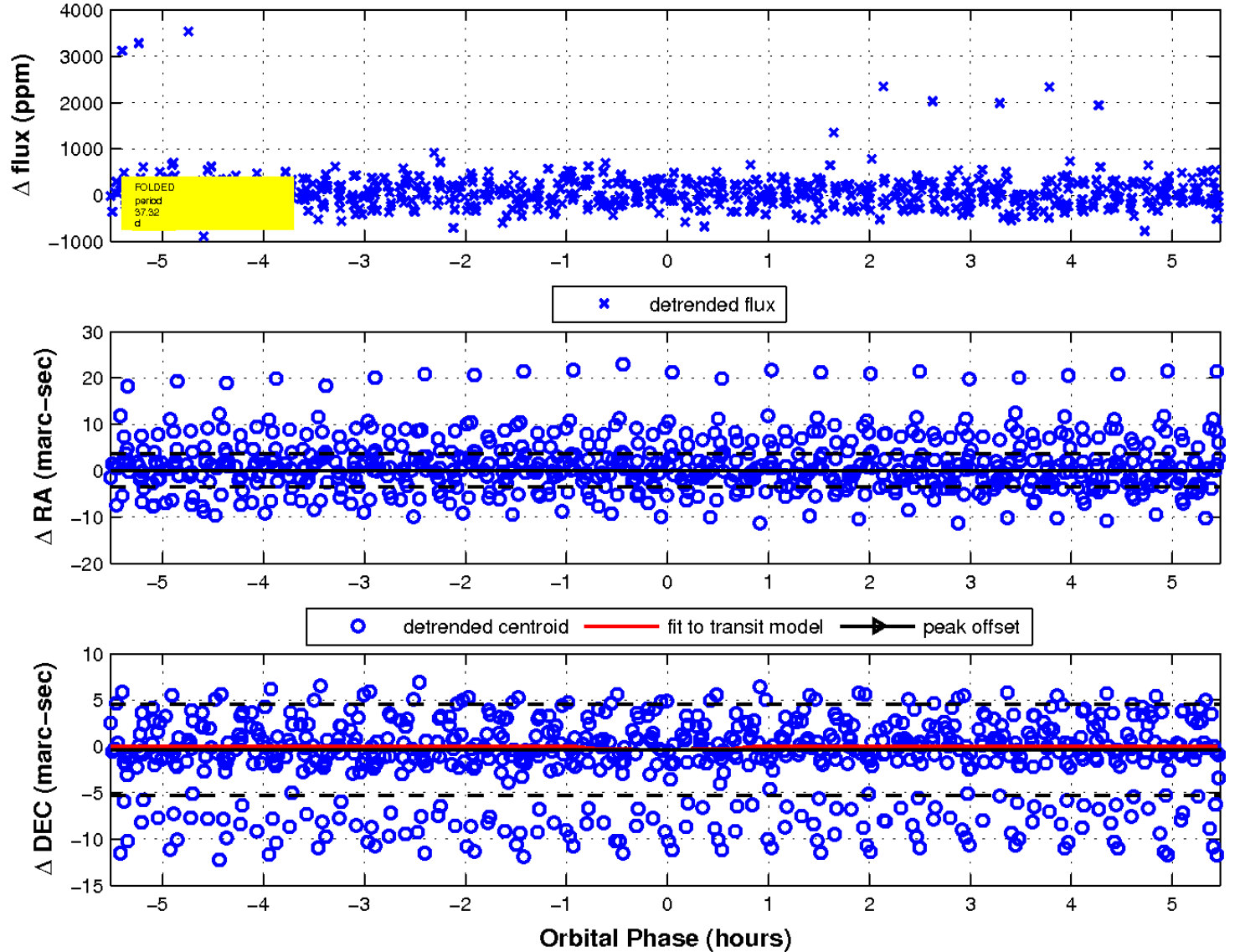
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



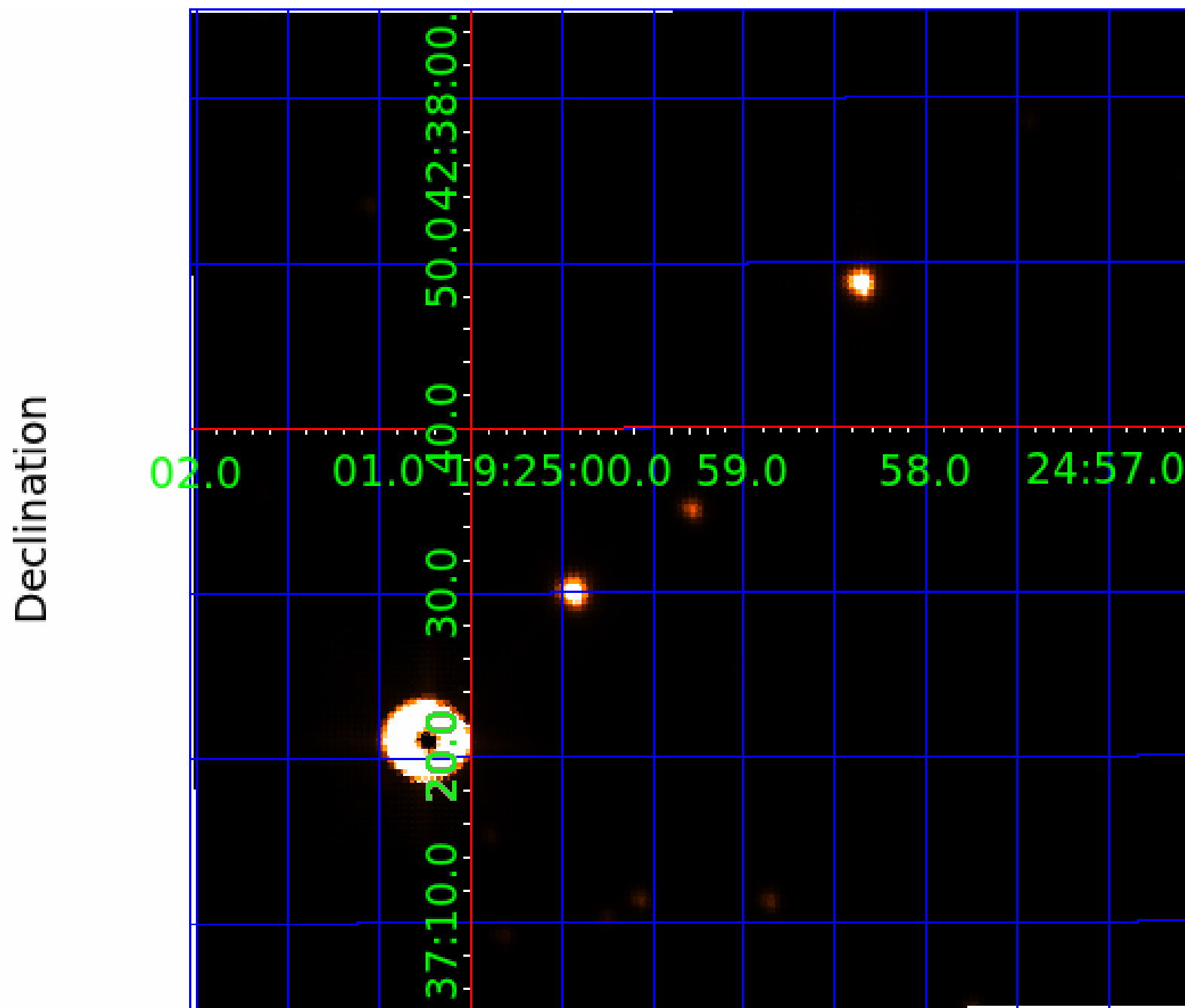
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



fluxWeightedCentroids, Planet 3 of 7



UKIRT Image



KIC 007116043

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})
007116043-01	OBS	6826.01	0.566776	131.845856	42.4	3.909	11.5	13.0	1.13	5576	0.76	6499.31
007116043-03	OBS	No	37.317954	146.597466	2842.0	1.841	10.6	8.0	1.13	5576	6.53	24.45
007116043-05	OBS	No	37.994544	166.125687	3934.9	3.182	11.3	8.4	1.13	5576	9.13	23.87
007116043-06	OBS	No	7.372257	132.336098	2150.6	2.855	10.3	9.5	1.13	5576	9.84	212.46
007116043-07	OBS	No	18.974014	149.582936	3458.6	2.102	10.8	8.8	1.13	5576	11.83	60.24

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007116043-01	OBS	FP	0.00	0	0	1	1	CENT_FEW_DIFFS—HALO_GHOST—EPHEM_MATCH
007116043-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_TER_ALT—MOD_POS_ALT—CENT_RESOLVED_OFFSET
007116043-05	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_POS_ALT—CENT_RESOLVED_OFFSET—HALO_GHOST
007116043-06	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_DV—MOD_TER_ALT—MOD_POS_ALT—CENT_RESOLVED_OFFSET
007116043-07	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—CENT_RESOLVED_OFFSET—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.

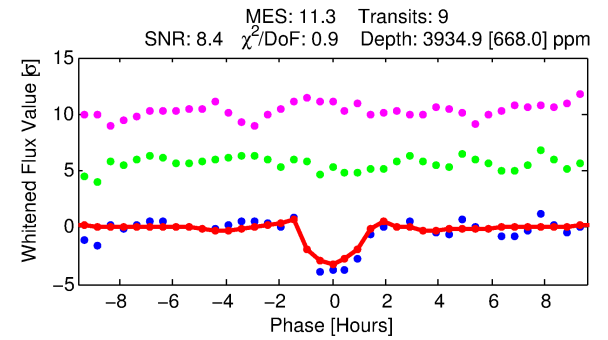
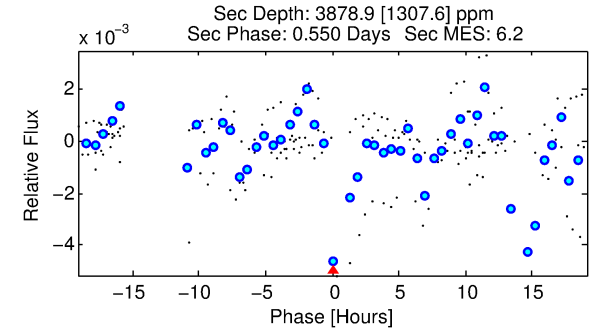
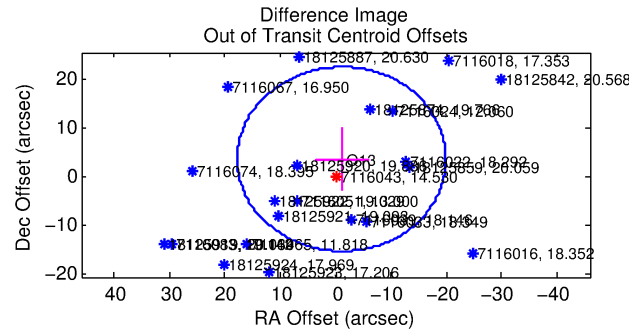
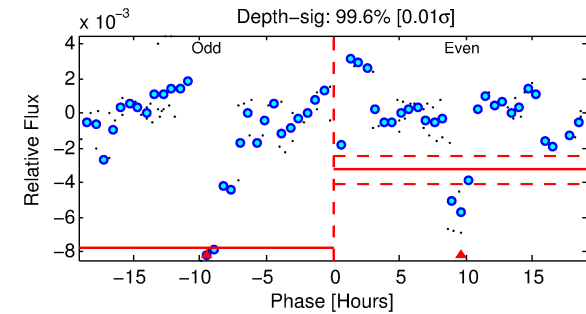
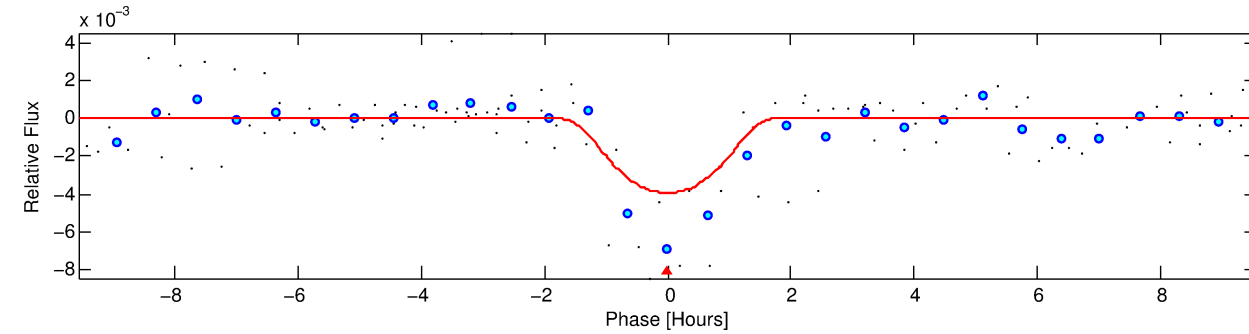
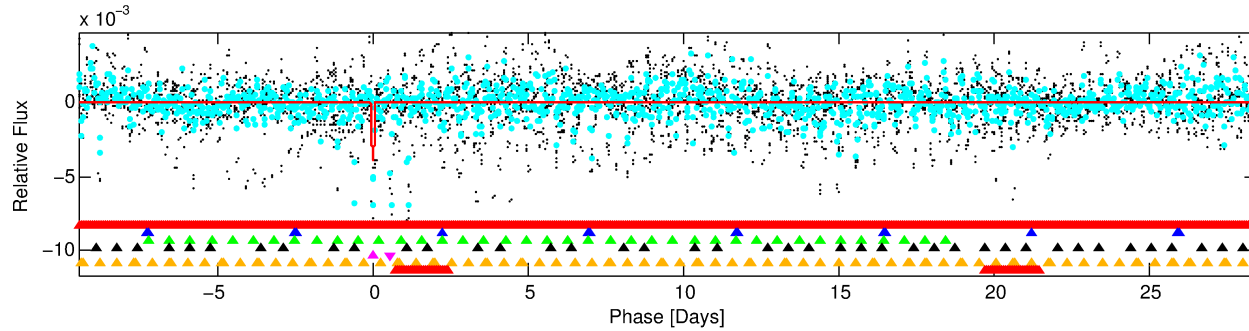
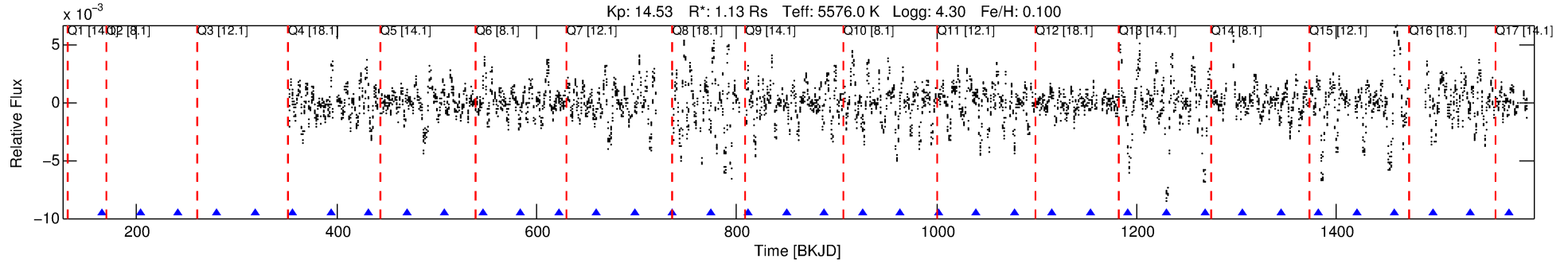
Ephemeris Match Information For 007116043-05

No Significant Match Found

DV One-Page Summary

KIC: 7116043 Candidate: 5 of 7 Period: 37.995 d

KOI: K06826 Corr: No Ephemeris Match



DV Fit Results:

Period = 37.99454 [0.00070] d
Epoch = 166.1257 [0.0194] BKJD
Rp/R* = 0.0739 [0.0229]
a/R* = 48.20 [11.55]
b = 0.93 [0.07]
Seff = 23.87 [8.96]
Teq = 564 [53] K
Rp = 9.13 [3.80] Re
a = 0.2156 [0.0513] AU
Ag = 1190.19 [938.79] [1.27σ]
Teffp = 5118 [919] K [4.95σ]

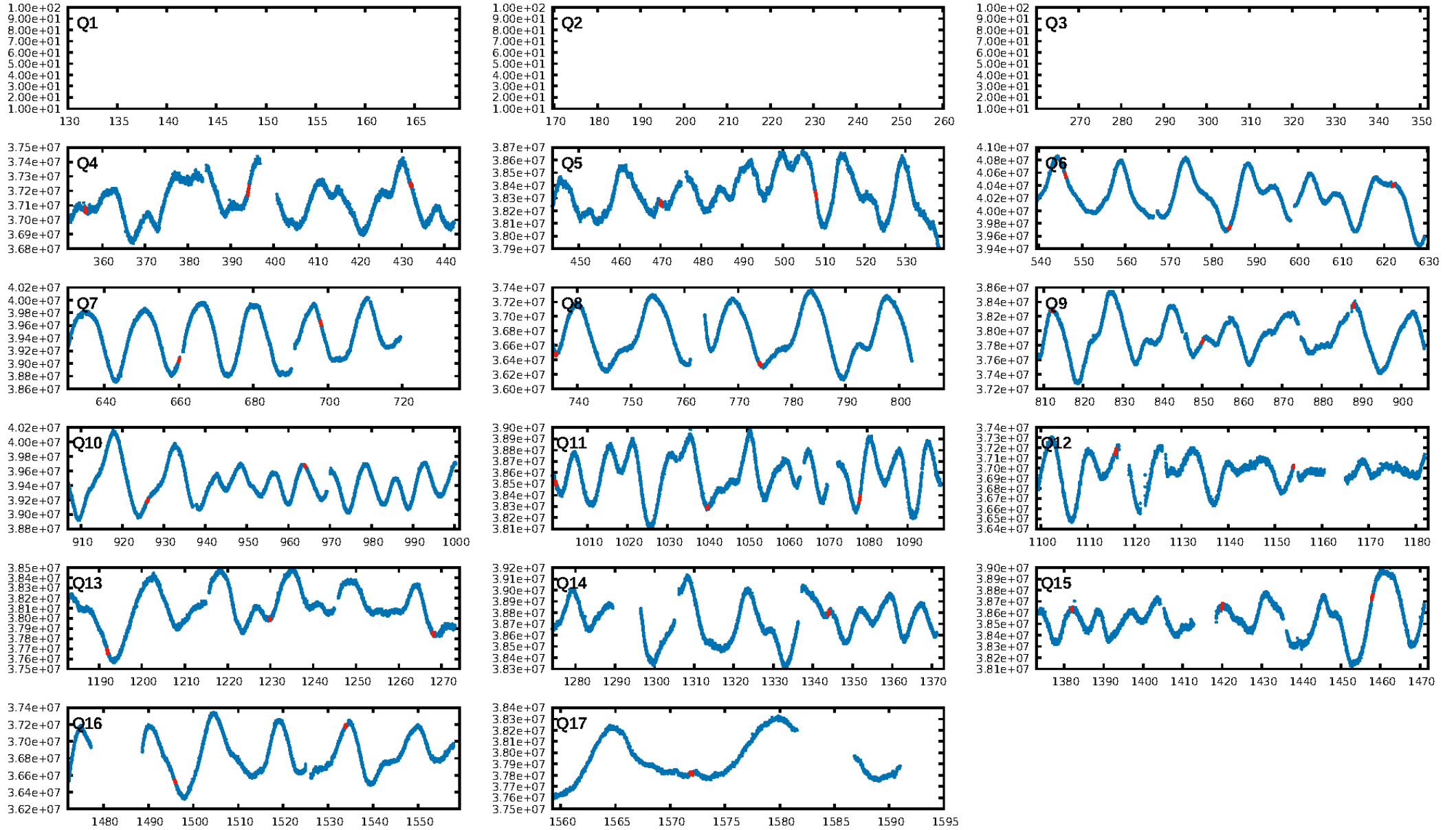
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [4.42σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 16.7%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [9/9]
GhostDiagnostic-chr: -0.02009
Centroid-sig: 16.5%
Centroid-so: 3.102 arcsec [37.99σ]
OotOffset-rm: 3.795 arcsec [0.60σ]
KicOffset-rm: 4.640 arcsec [0.97σ]
OotOffset-st: 0/0/0/1 [1]
KicOffset-st: 0/0/0/1 [1]
DiffImageQuality-fgm: 0.00 [0/1]
DiffImageOverlap-fno: 0.00 [0/14]

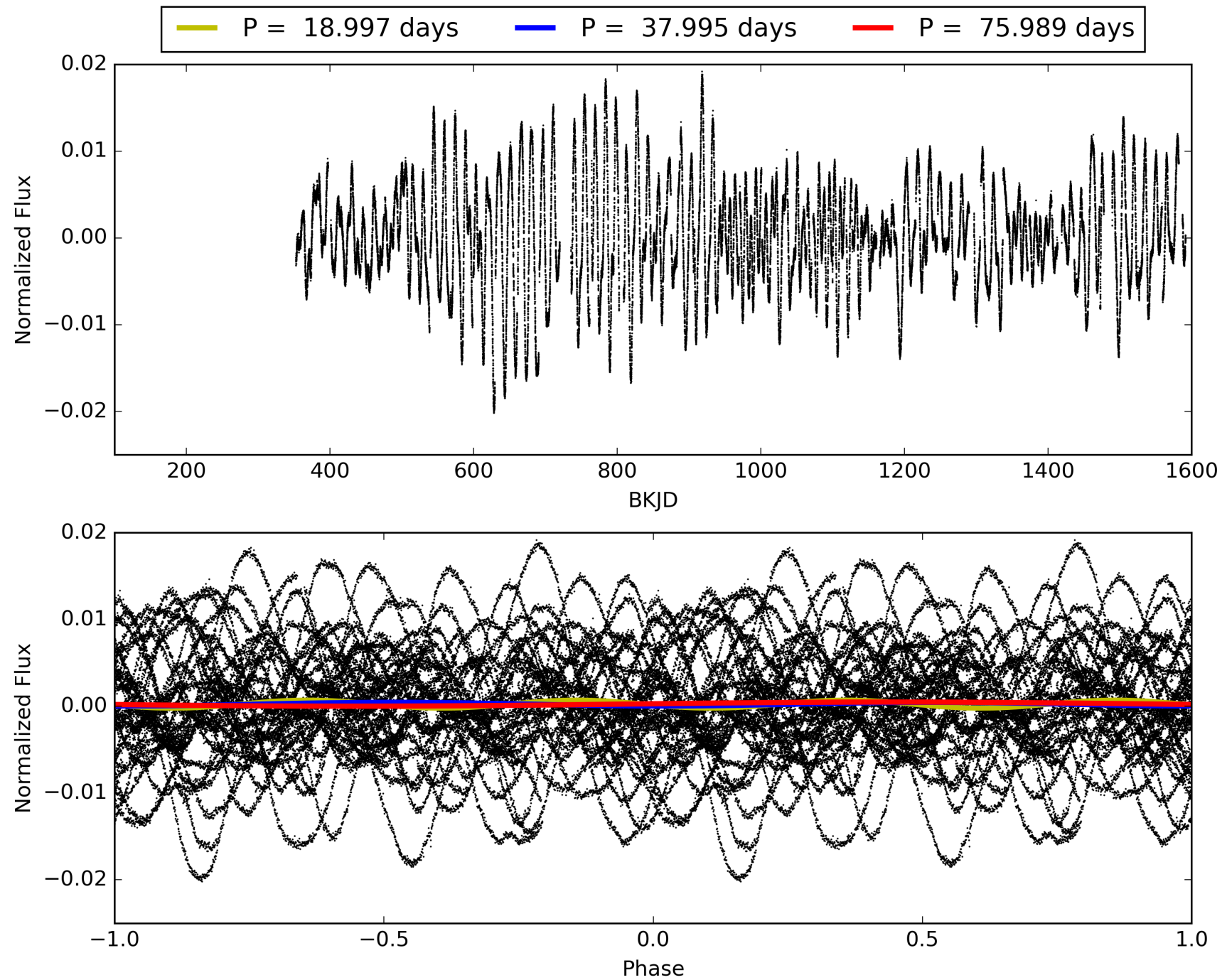
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 15:04:52 Z

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

TCE 007116043-05, PDC Light Curves

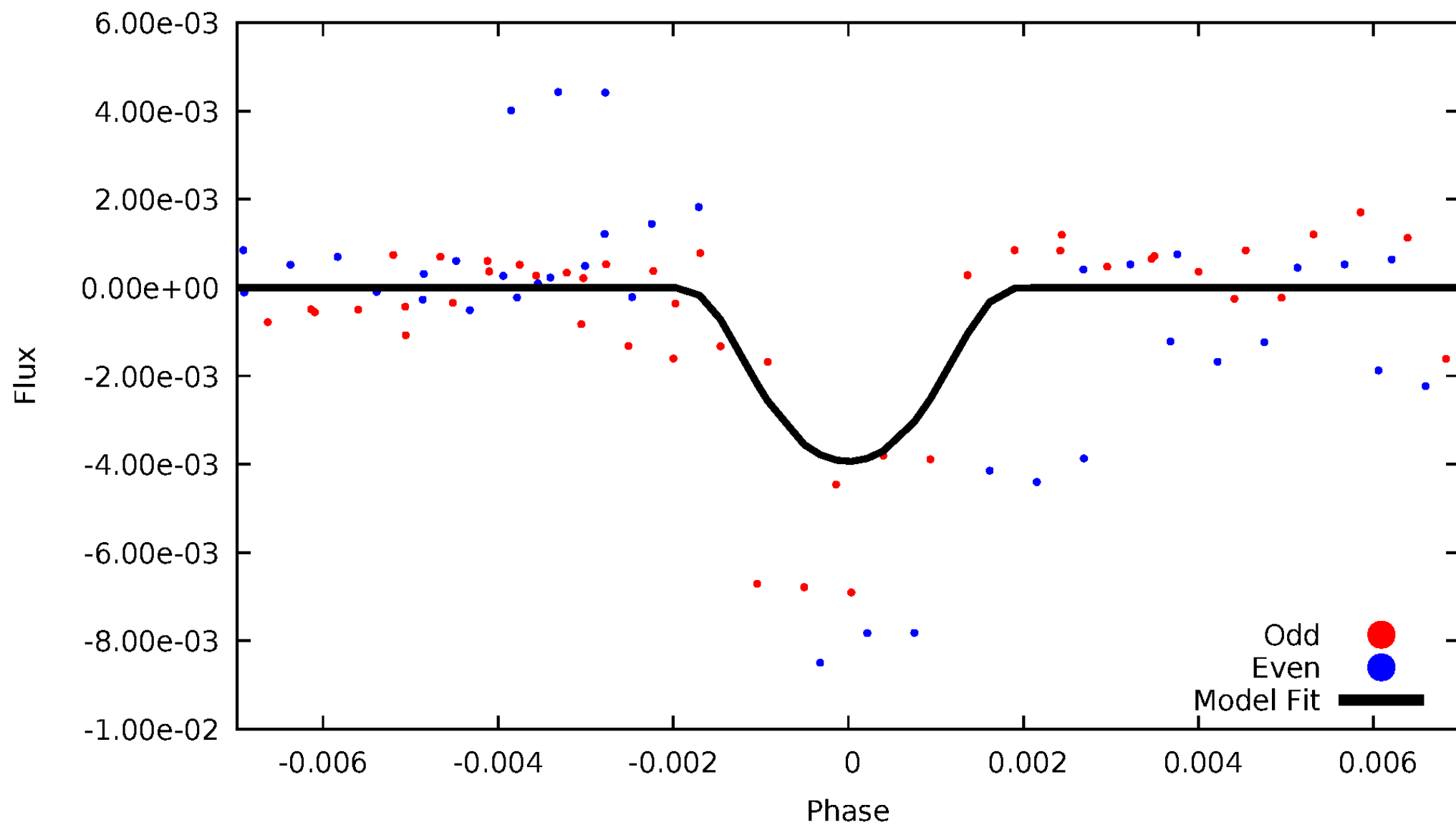


TCE 007116043-05



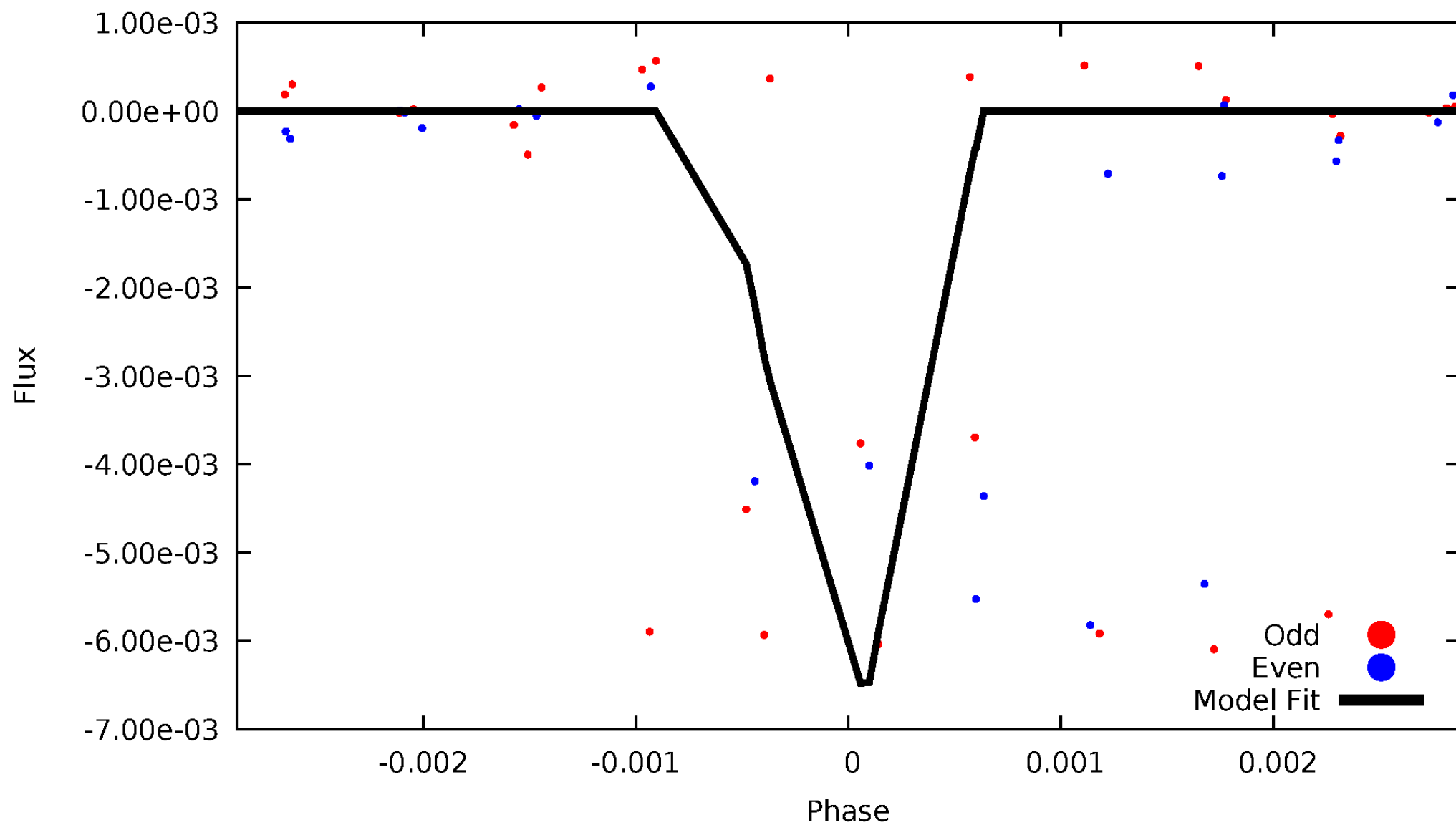
DV Odd/Even

TCE 007116043-05



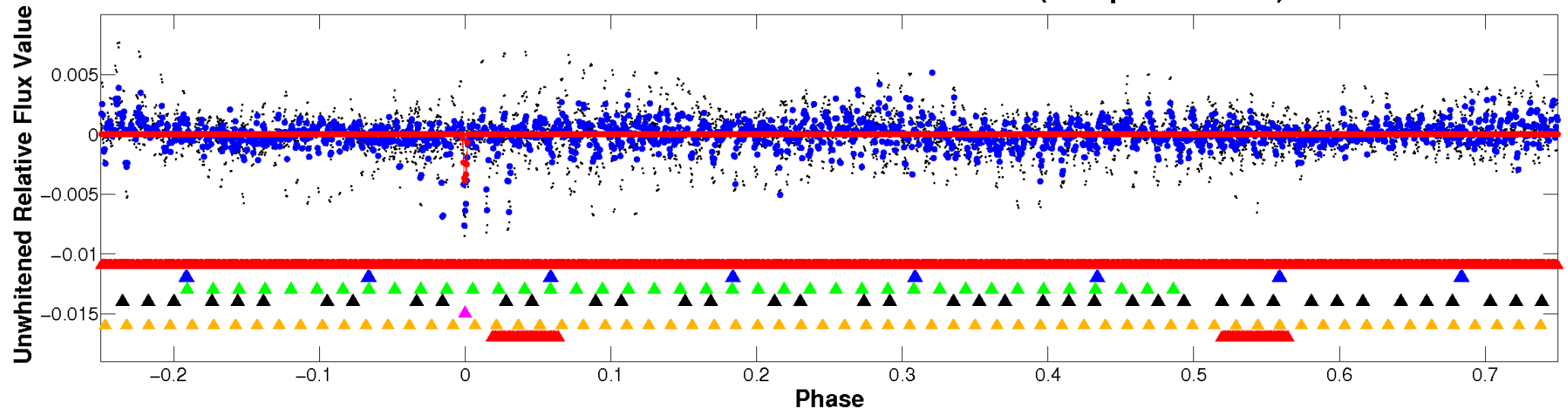
ALT Odd/Even

TCE 007116043-05

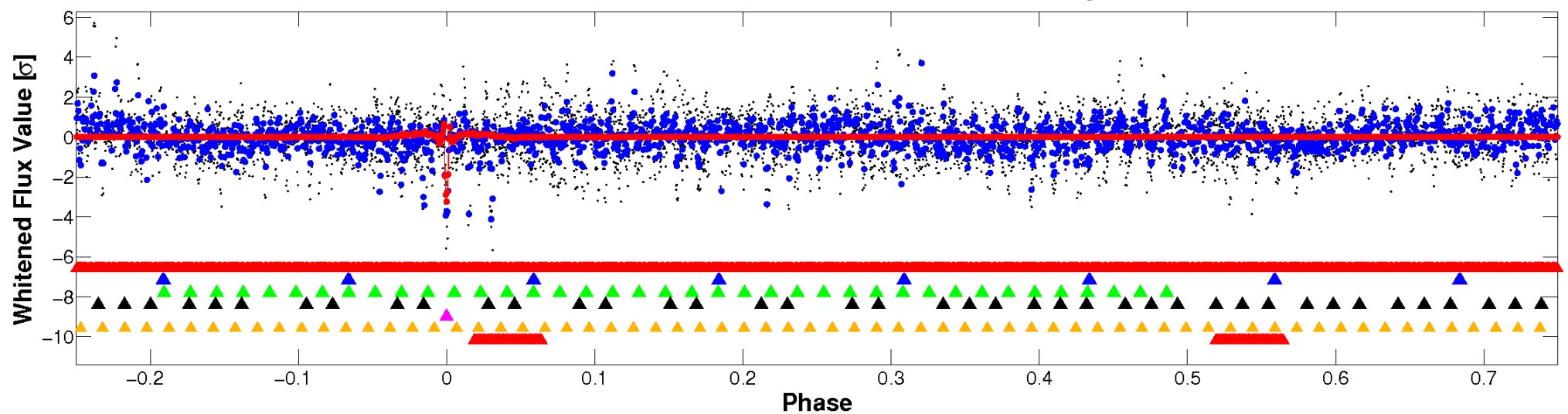


Non-Whitened Vs. Whitened Light Curve

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

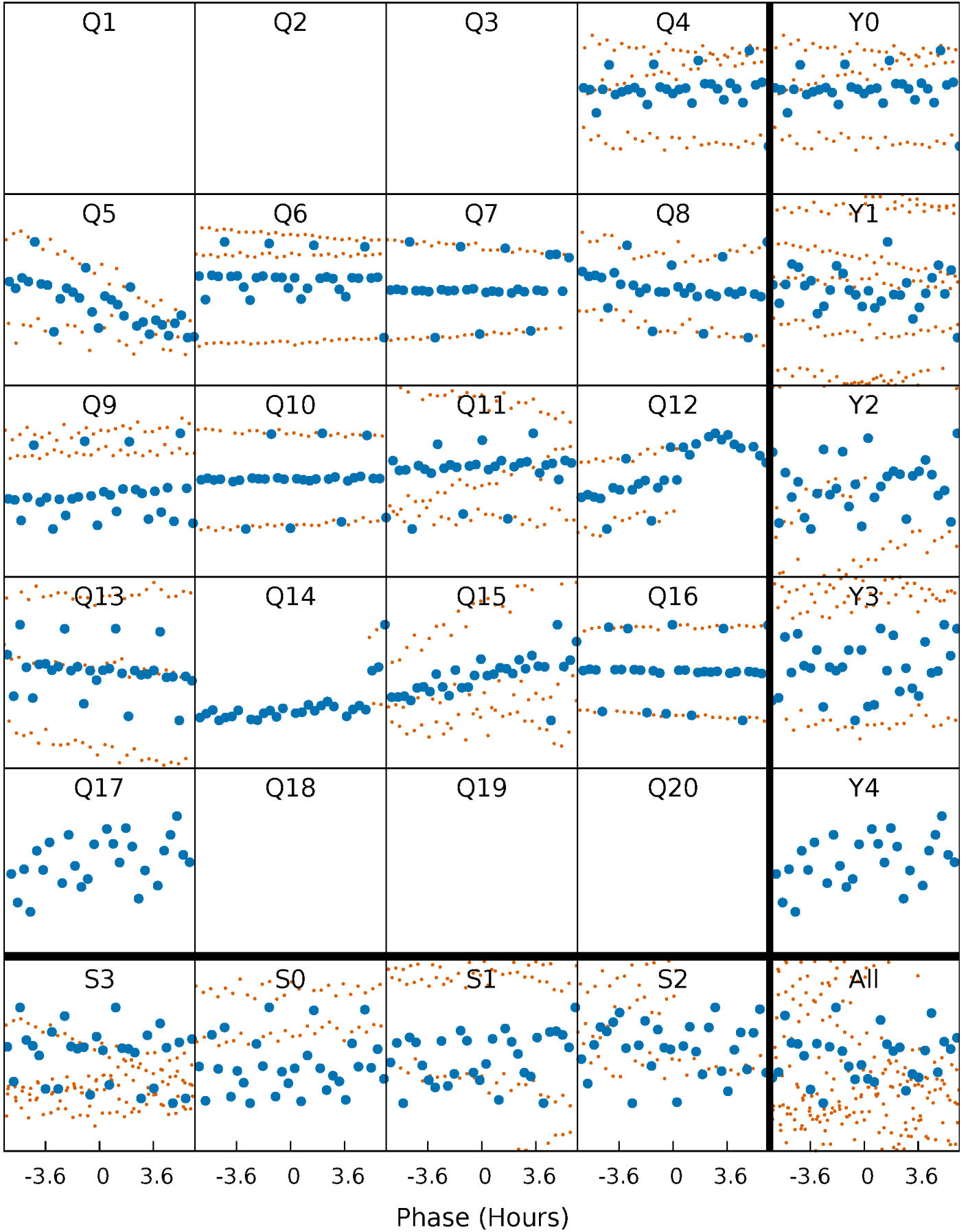


Planet 5 : Phased Whitened Flux Time Series (Fit Epoch/Period)



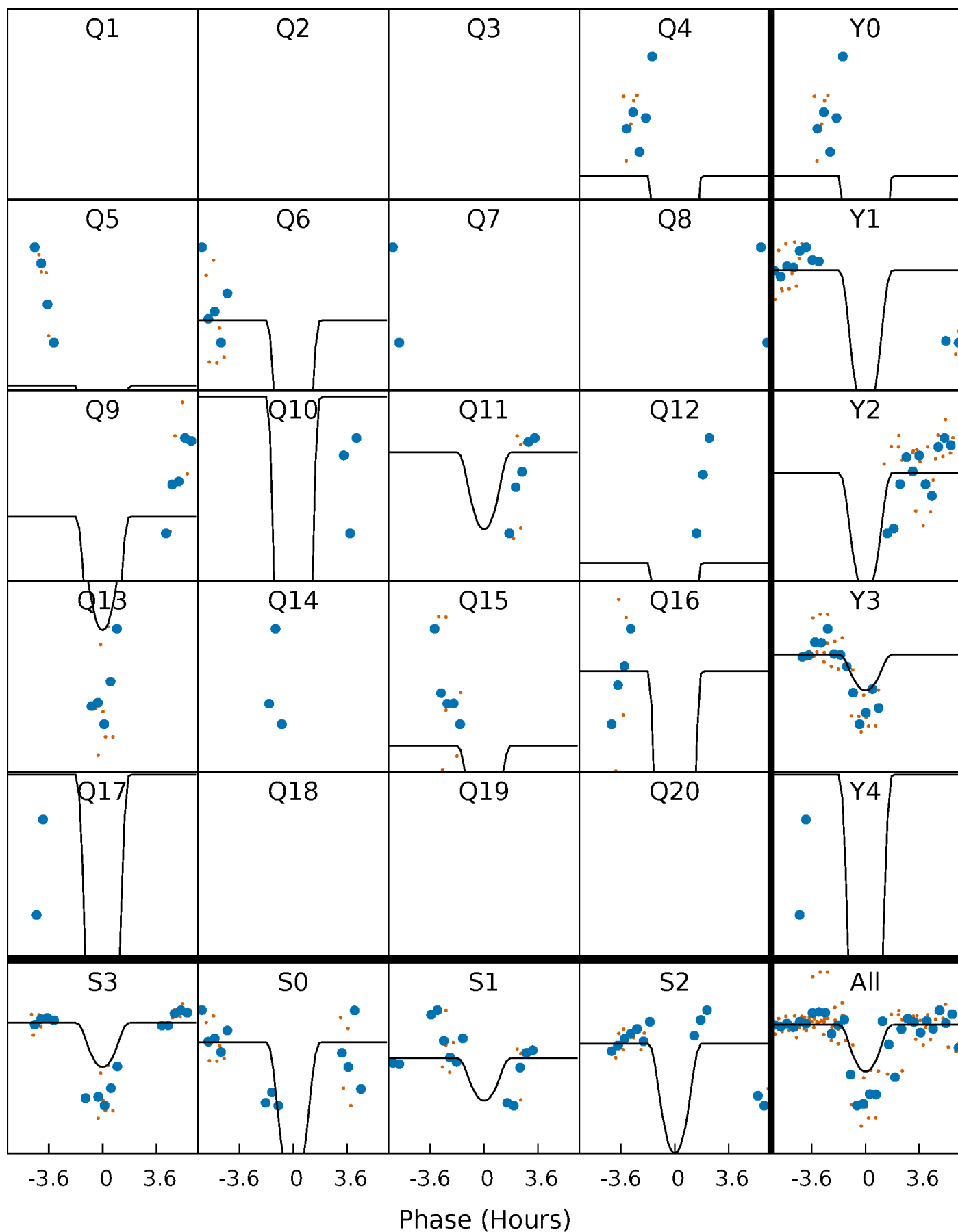
PDC Quarter-Phased Transit Curves

TCE 007116043-05 $P = 37.994544$ Days $T_0 = 166.125687$ (BKJD)



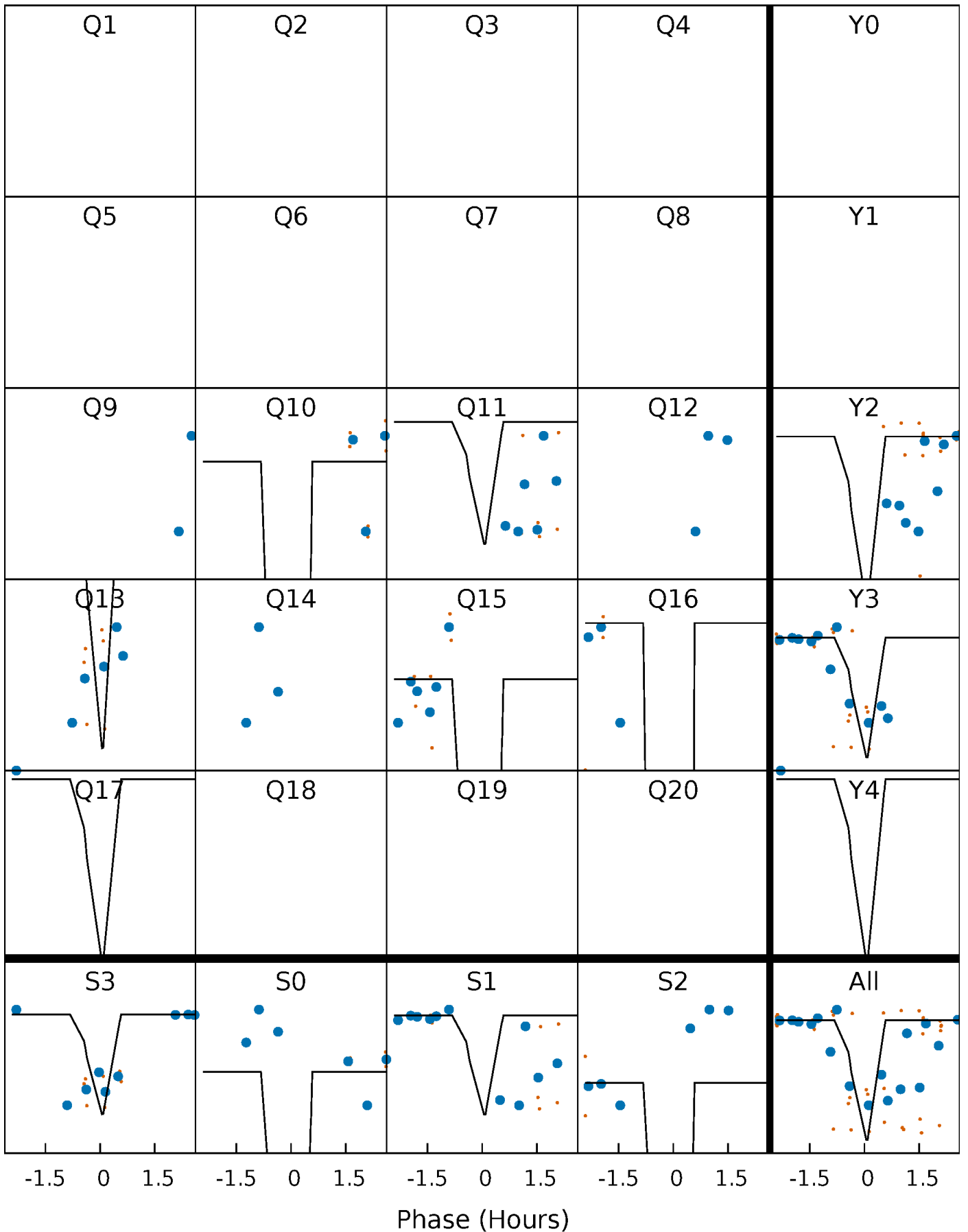
DV Quarter-Phased Transit Curves

TCE 007116043-05 P= 37.994544 Days $T_0=166.125687$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

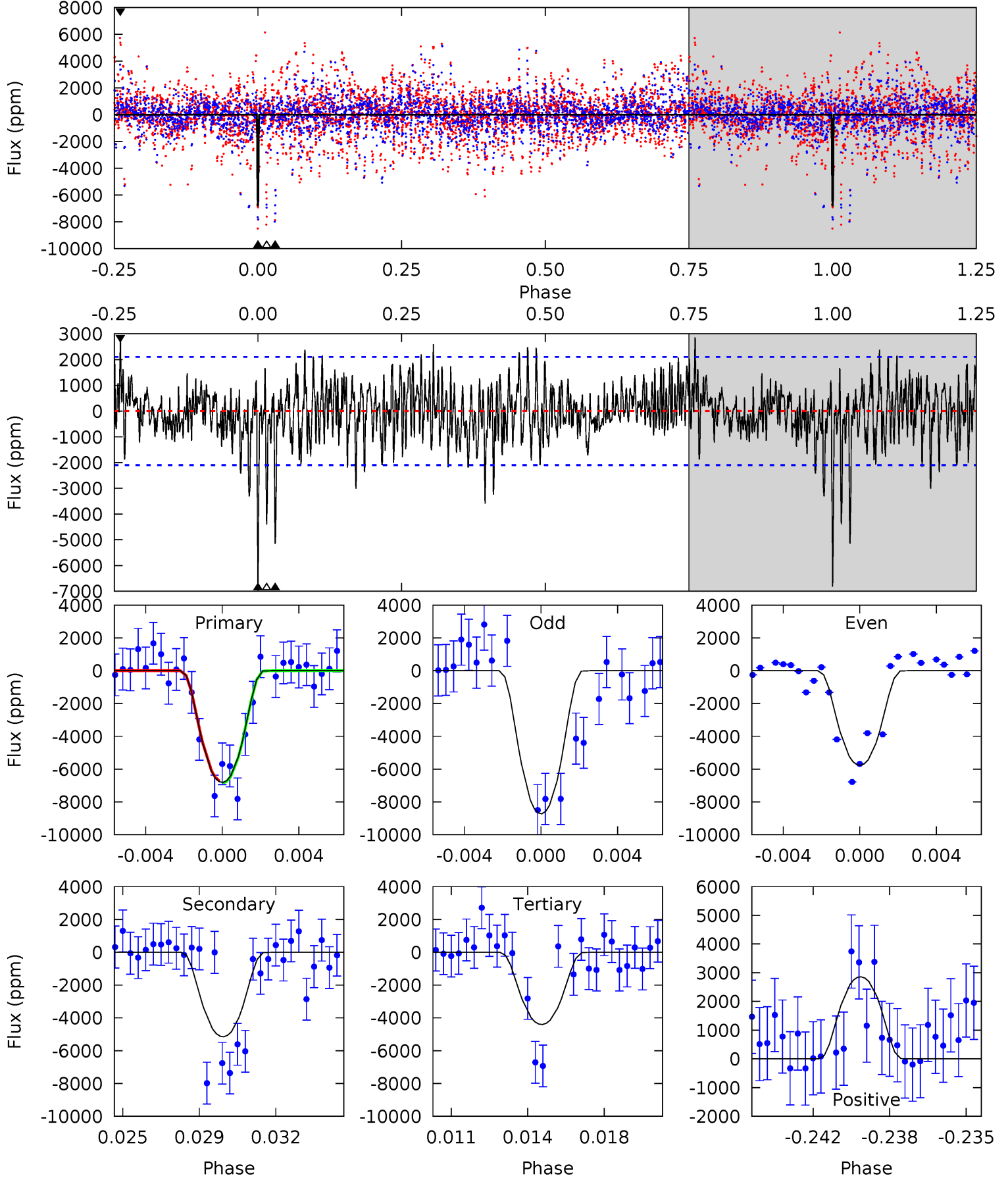
TCE 007116043-05 $P = 37.986026$ Days $T_0 = 166.368628$ (BKJD)



DV Model-Shift Uniqueness Test

007116043-05, P = 37.994544 Days, E = 166.125687 Days

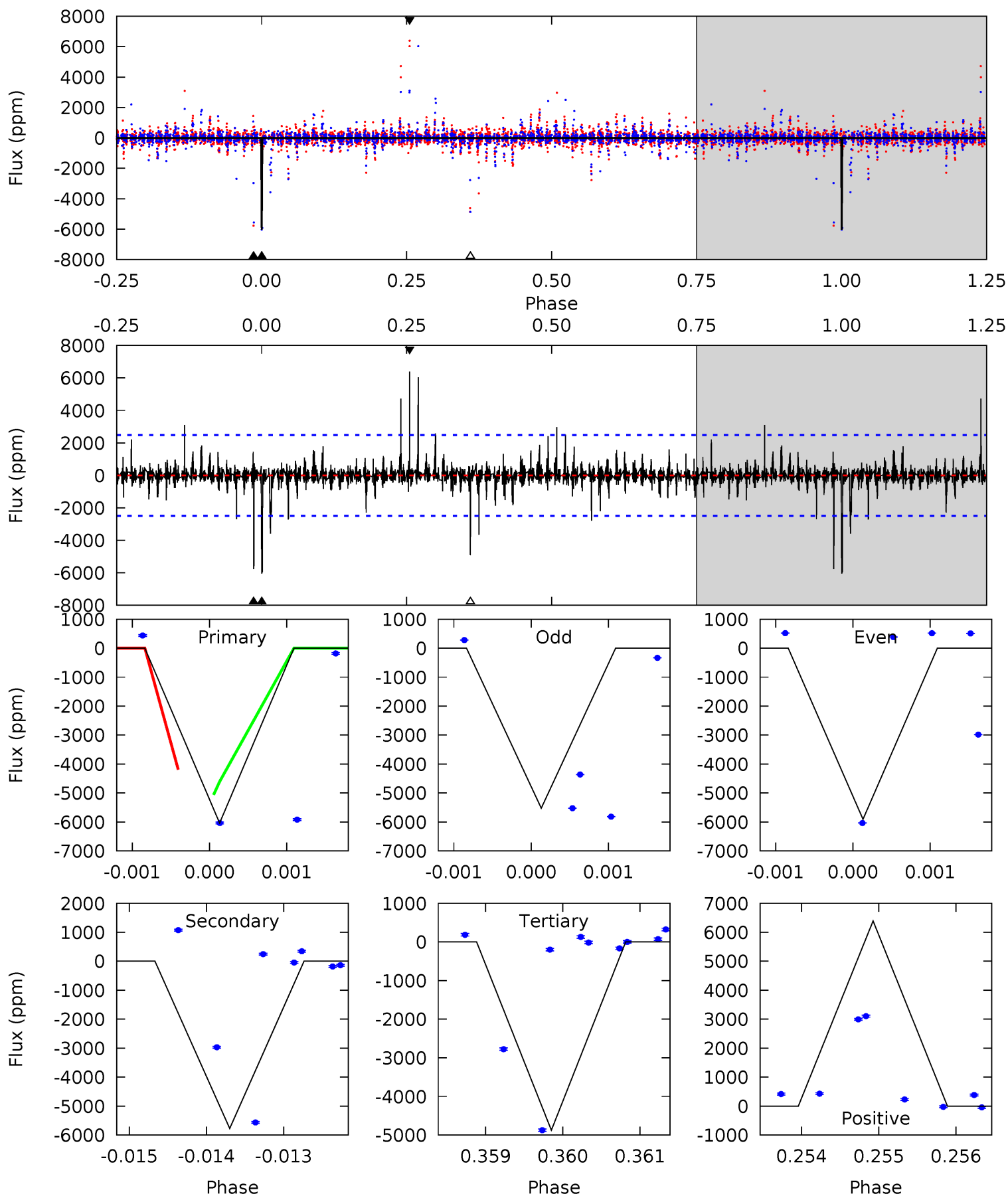
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.9	12.8	11.0	7.11	5.22	2.91	2.12	5.98	9.83	1.86	5.70	3.16	1.00	0.30	0.16



Alt Model-Shift Uniqueness Test

007116043-05, P = 37.986026 Days, E = 166.368628 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.2	12.6	10.7	14.0	5.44	3.27	1.00	2.54	-0.78	1.96	-1.36	0.55	1.21	0.51	0



Stellar Parameters For KIC 007116043

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5576^{+183}_{-183}	$4.297^{+0.195}_{-0.195}$	$0.100^{+0.250}_{-0.300}$	$1.132^{+0.314}_{-0.257}$	$0.928^{+0.115}_{-0.084}$	$0.900^{+0.941}_{-0.466}$
	+3%/-3%	+5%/-5%	+250%/-300%	+28%/-23%	+12%/-9%	+105%/-52%
Source	KIC0	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 007116043-05 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-5153 ± 402	$9.09^{+3.34}_{-2.89}$	786^{+62}_{-57}	5511^{+1078}_{-649}	1629^{+1937}_{-754}
Alt.	-5771 ± 457	$10.05^{+3.48}_{-3.05}$	787^{+65}_{-55}	5417^{+995}_{-621}	1499^{+1584}_{-704}

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 $A_{obs} \gg 1.0$

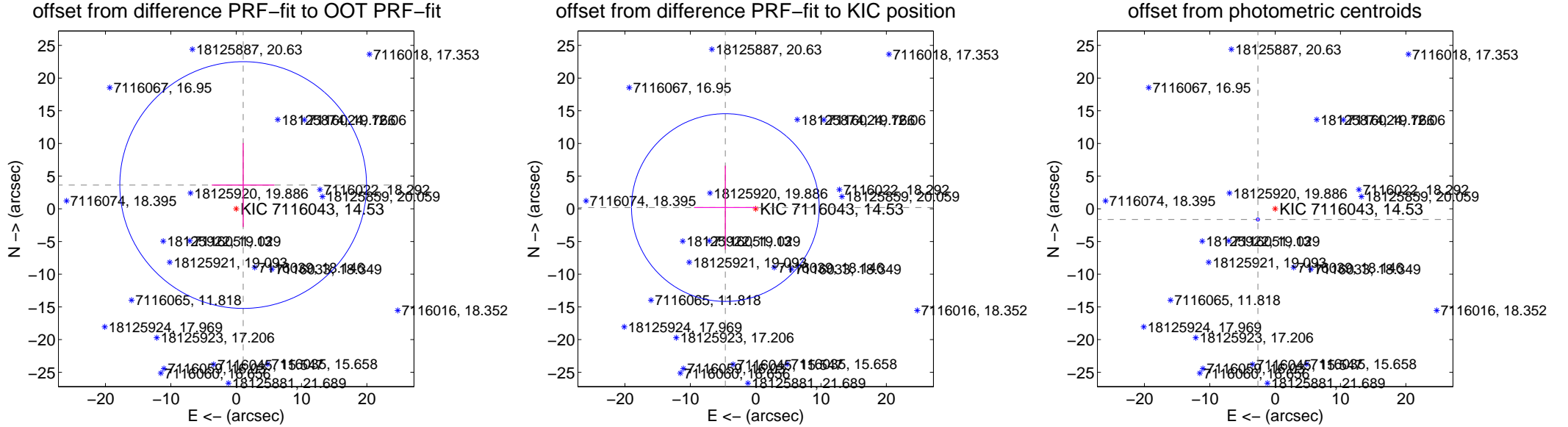
DV Centroid Data

Supplemental centroid analysis for 007116043-05. Kepler magnitude: 14.53. Transit SNR 8.44

There are 0 quarters with good PRF difference image offsets

The OOT PRF centroid is offset from the target star catalog position by about 6.67 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	3.795 ± 6.290	0.60	-1.071 ± 4.782	3.641 ± 6.404
PRF-fit source offset from KIC position	4.640 ± 4.785	0.97	4.636 ± 4.782	0.197 ± 6.404
photometric centroid source offset	3.10 ± 0.08	37.99	2.64 ± 0.09	-1.63 ± 0.07



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



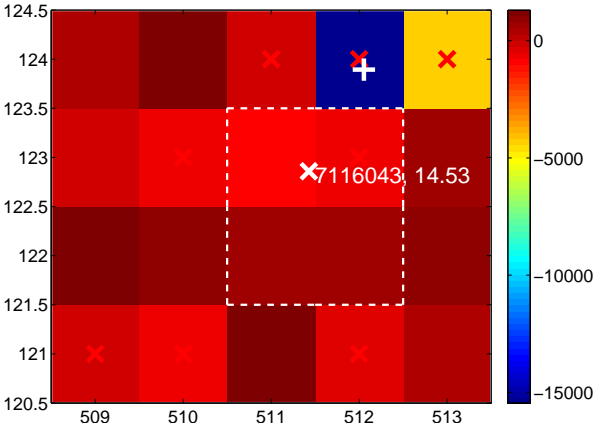
Q3 no difference image



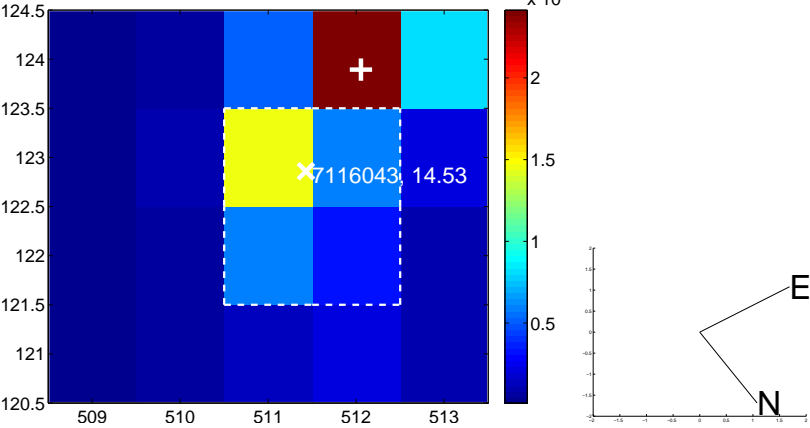
Q3 no OOT image



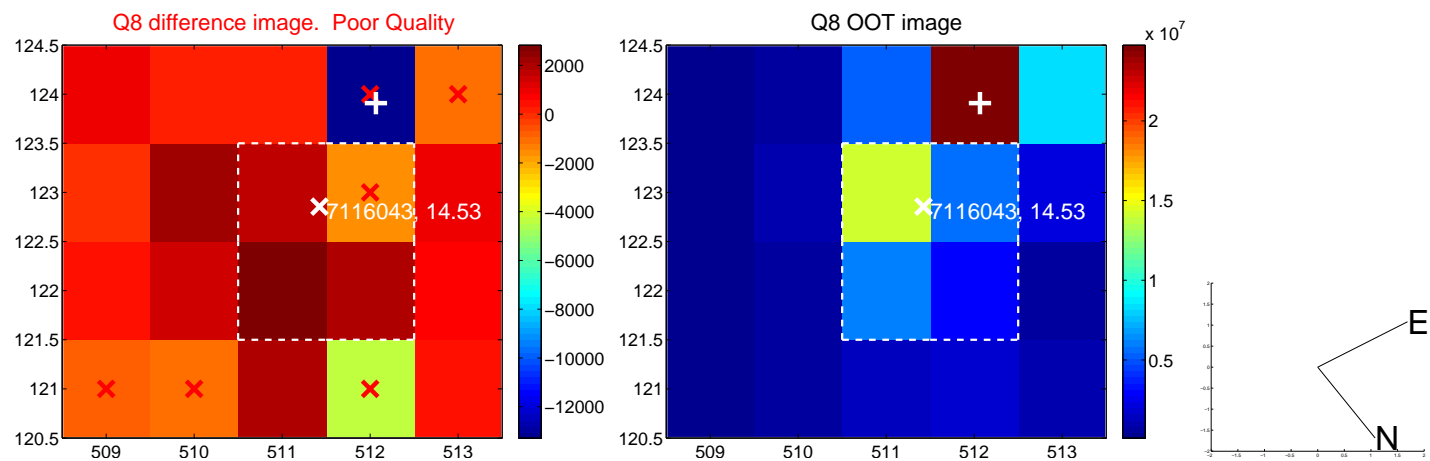
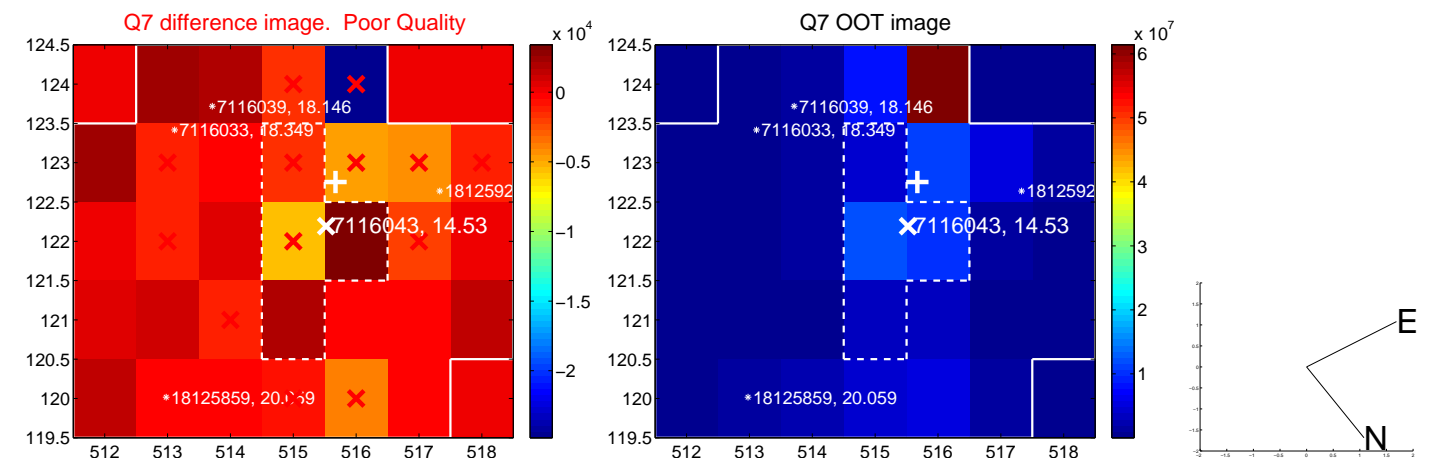
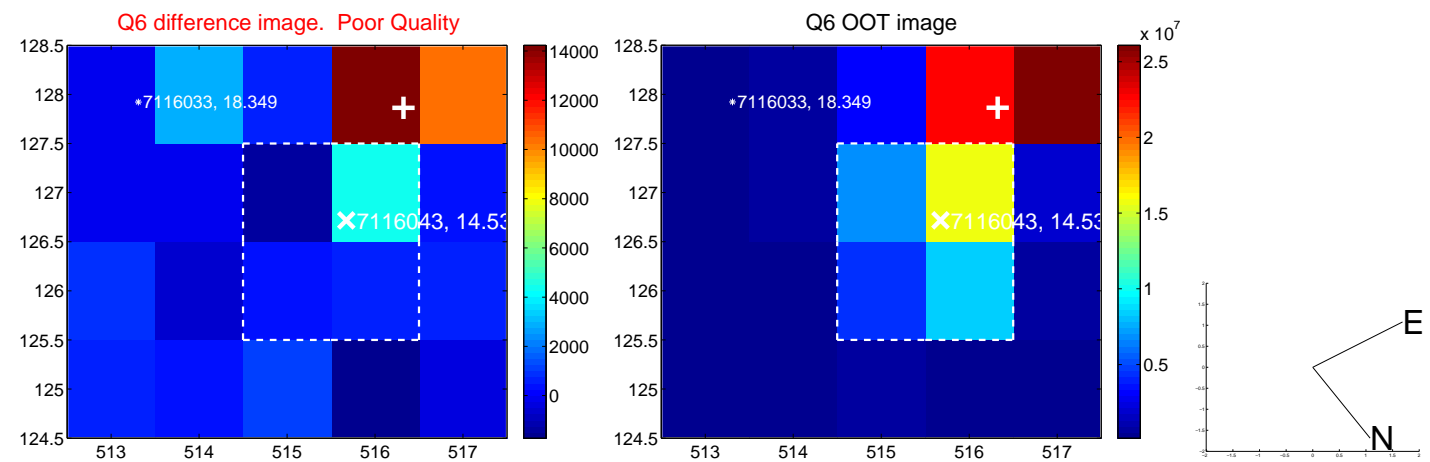
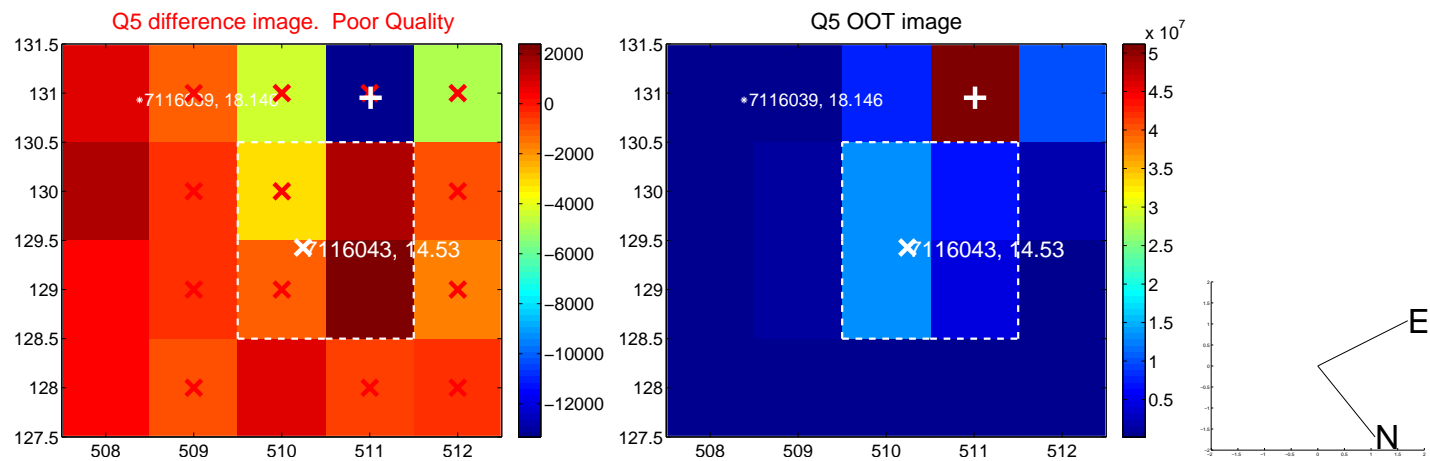
Q4 difference image. Poor Quality



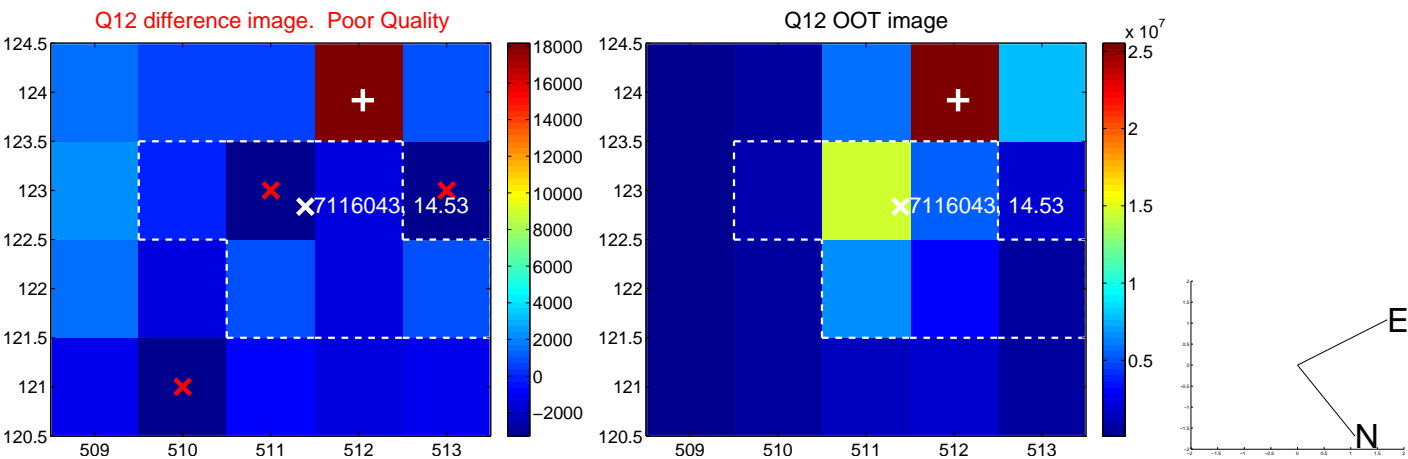
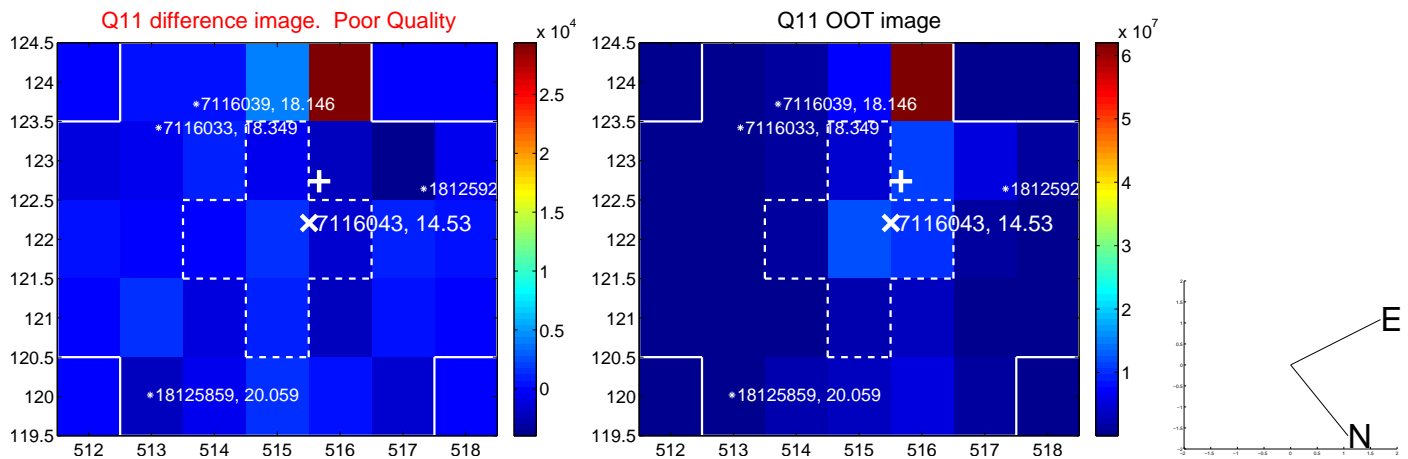
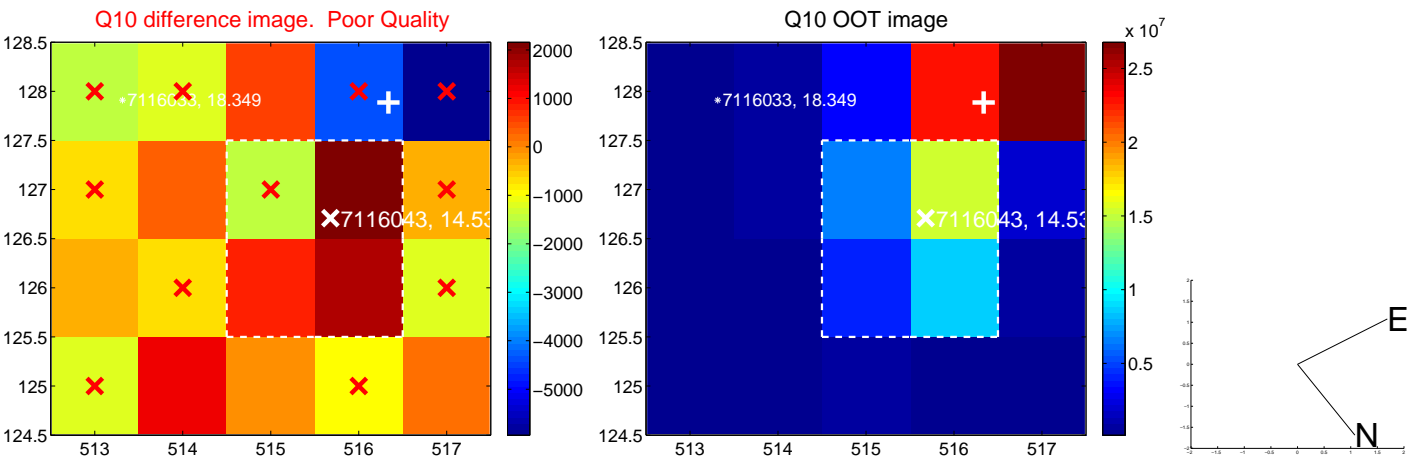
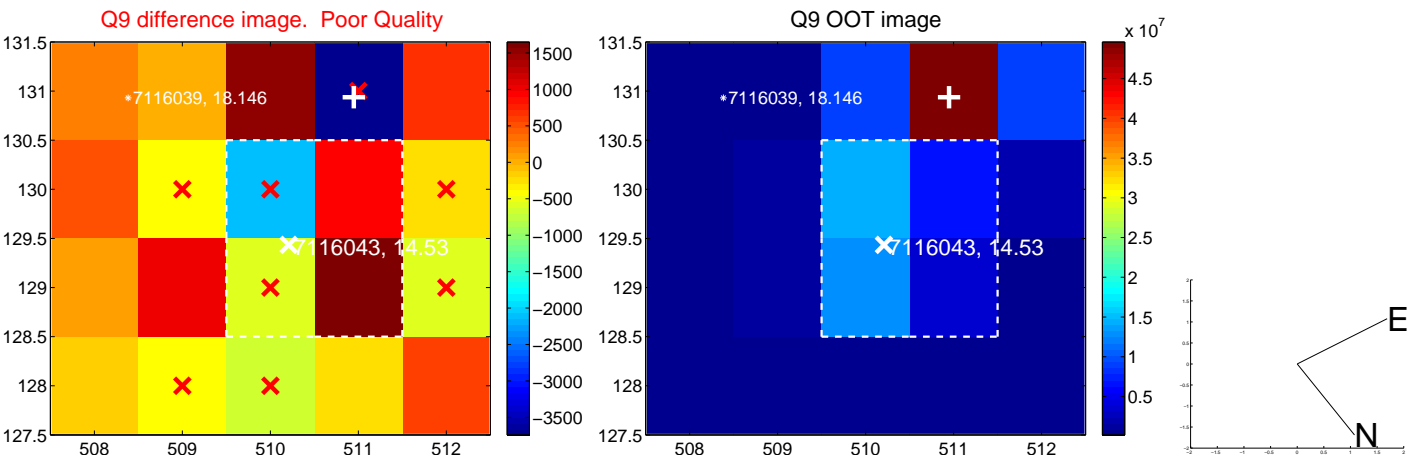
Q4 OOT image



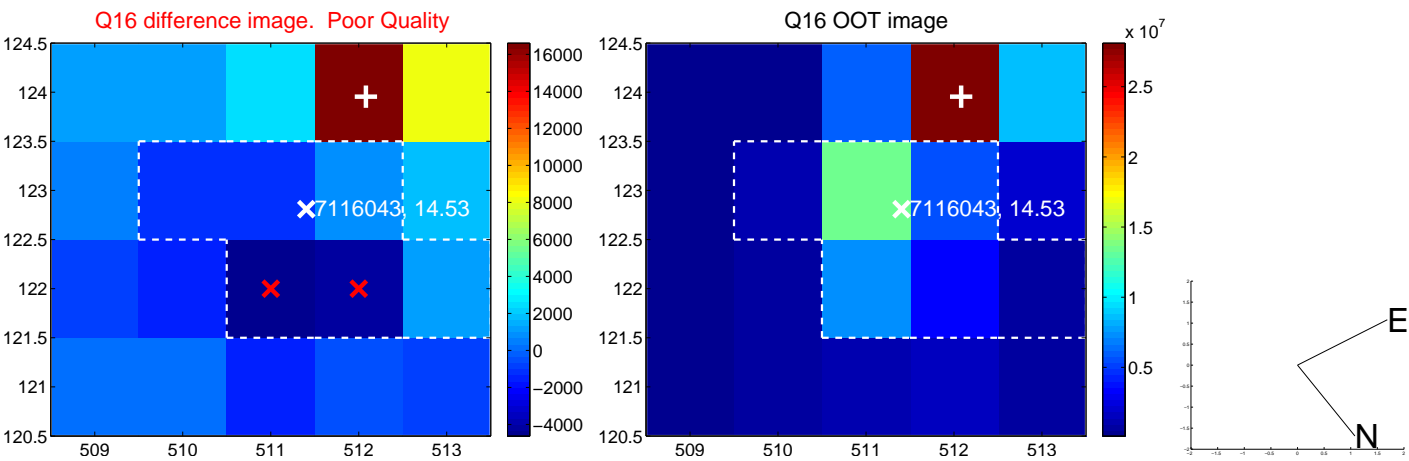
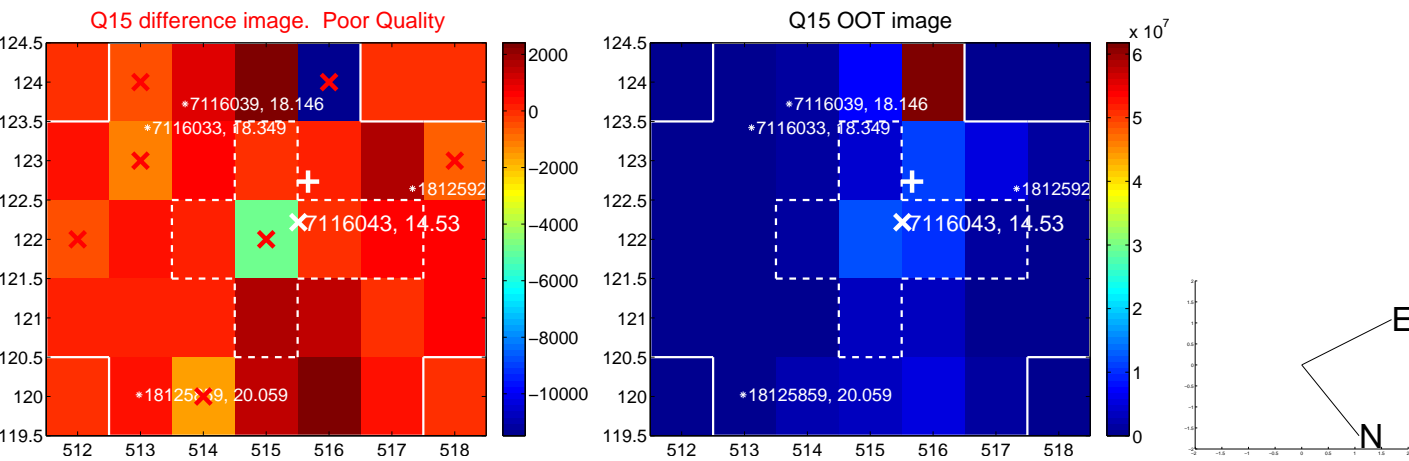
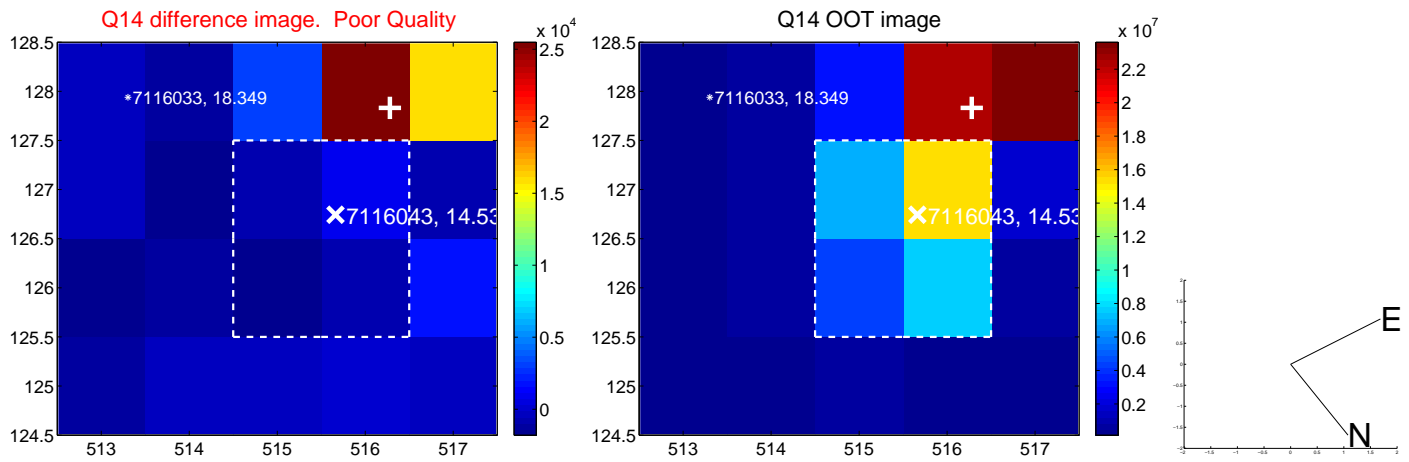
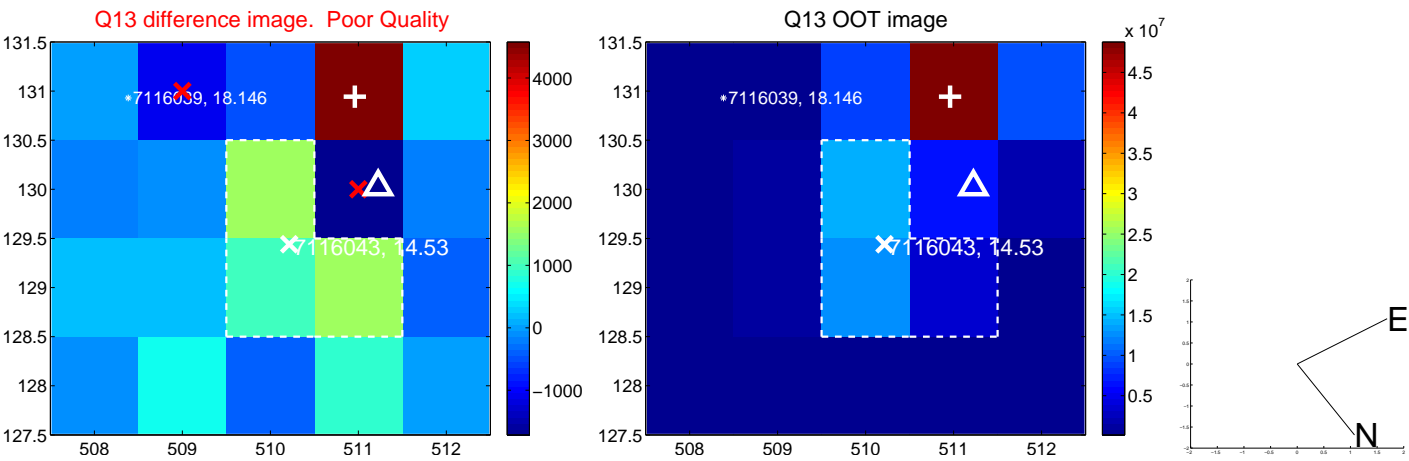
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



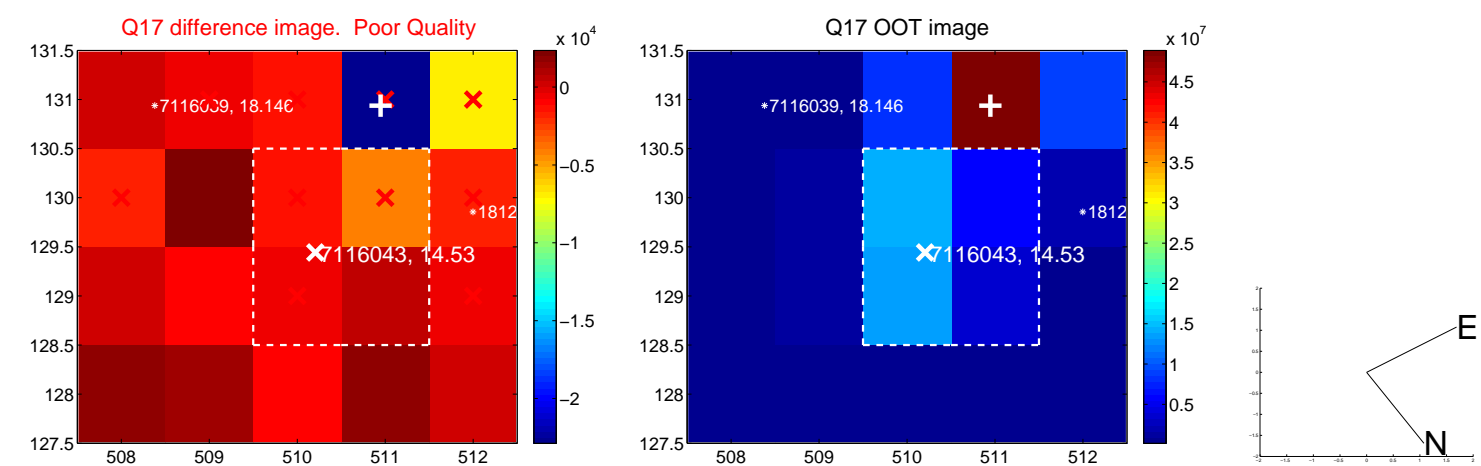
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



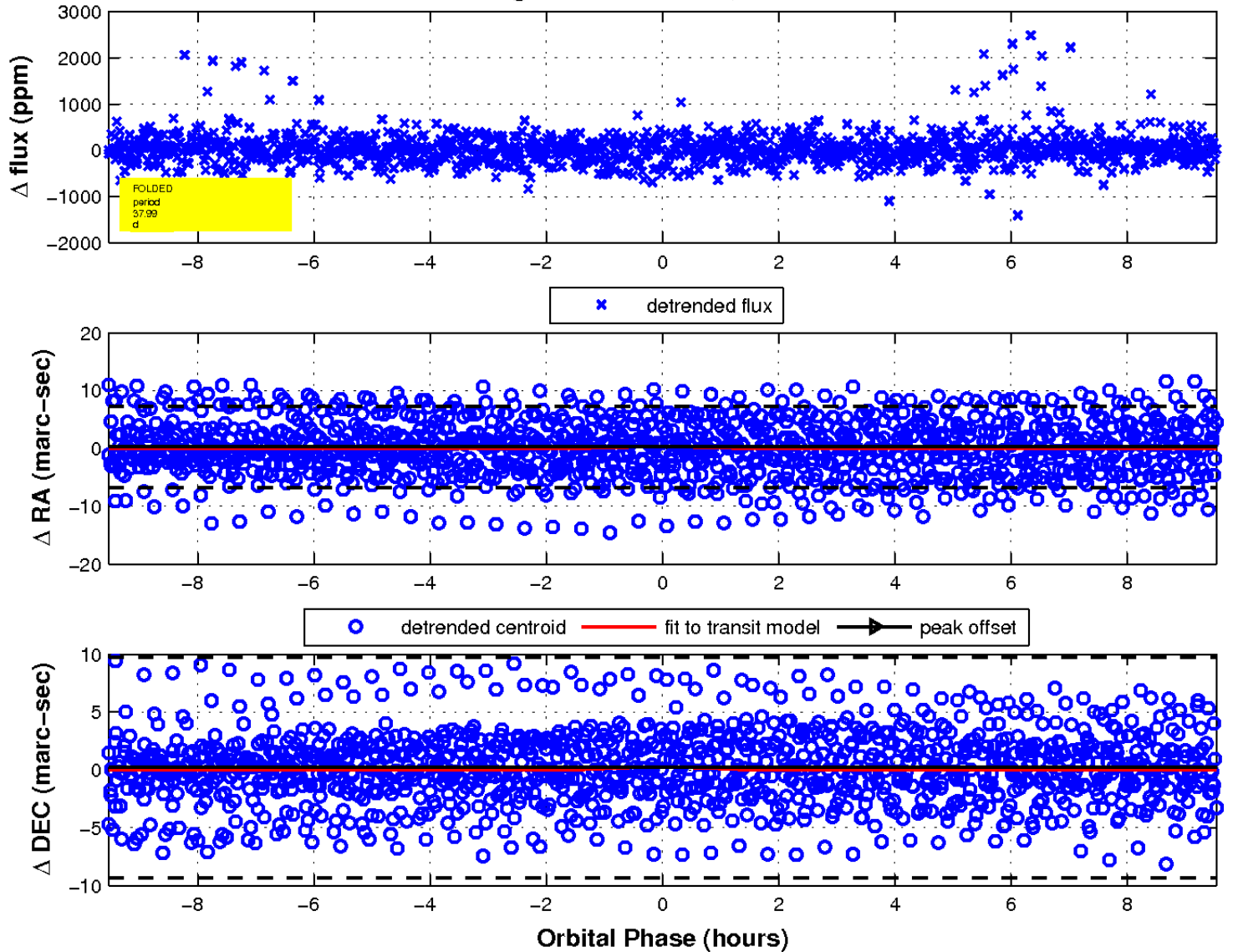
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



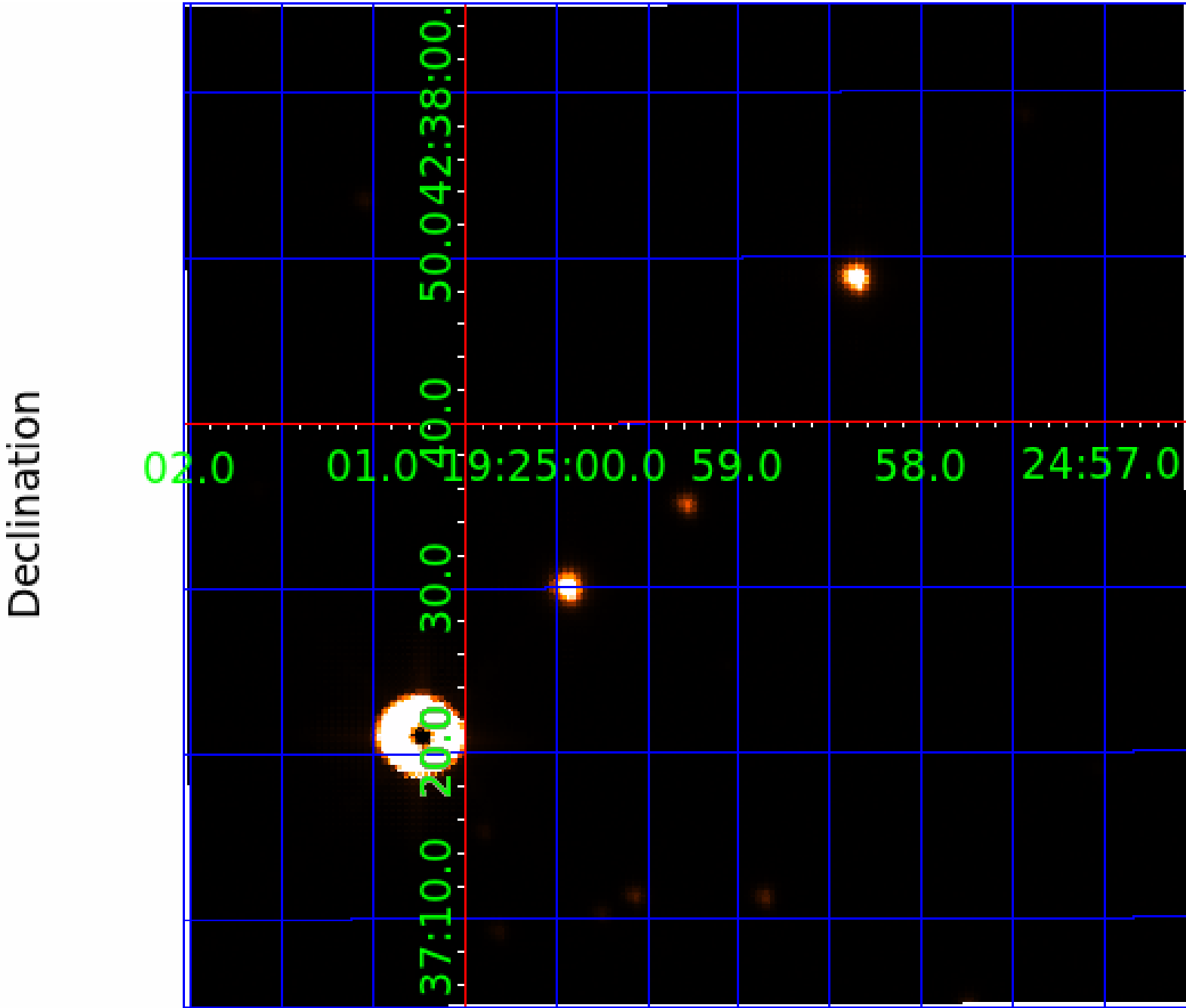
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



fluxWeightedCentroids, Planet 5 of 7



UKIRT Image



KIC 007116043

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})
007116043-01	OBS	6826.01	0.566776	131.845856	42.4	3.909	11.5	13.0	1.13	5576	0.76	6499.31
007116043-03	OBS	No	37.317954	146.597466	2842.0	1.841	10.6	8.0	1.13	5576	6.53	24.45
007116043-05	OBS	No	37.994544	166.125687	3934.9	3.182	11.3	8.4	1.13	5576	9.13	23.87
007116043-06	OBS	No	7.372257	132.336098	2150.6	2.855	10.3	9.5	1.13	5576	9.84	212.46
007116043-07	OBS	No	18.974014	149.582936	3458.6	2.102	10.8	8.8	1.13	5576	11.83	60.24

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007116043-01	OBS	FP	0.00	0	0	1	1	CENT_FEW_DIFFS—HALO_GHOST—EPHEM_MATCH
007116043-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_TER_ALT—MOD_POS_ALT—CENT_RESOLVED_OFFSET
007116043-05	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_POS_ALT—CENT_RESOLVED_OFFSET—HALO_GHOST
007116043-06	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_DV—MOD_TER_ALT—MOD_POS_ALT—CENT_RESOLVED_OFFSET
007116043-07	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—CENT_RESOLVED_OFFSET—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.

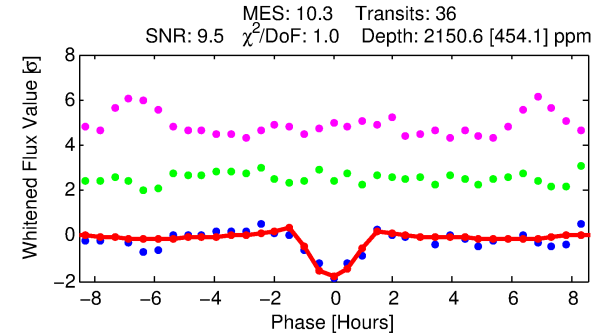
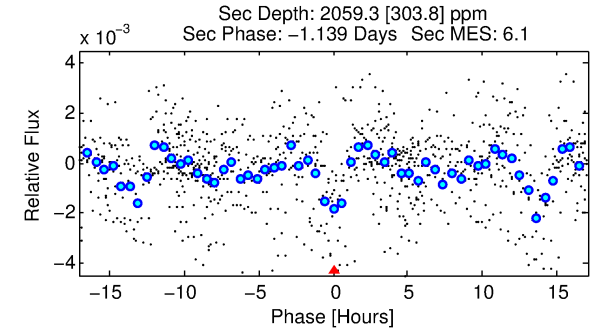
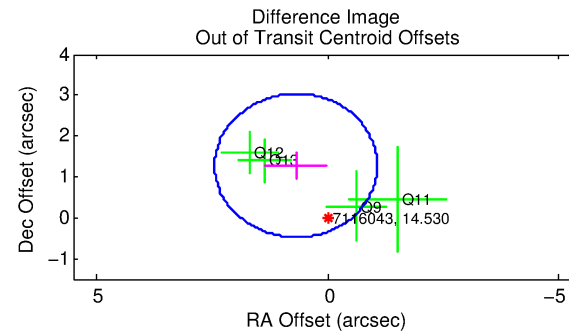
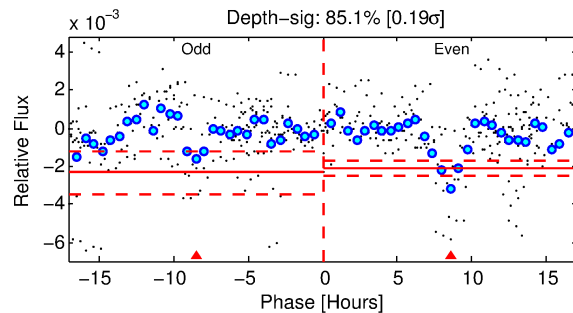
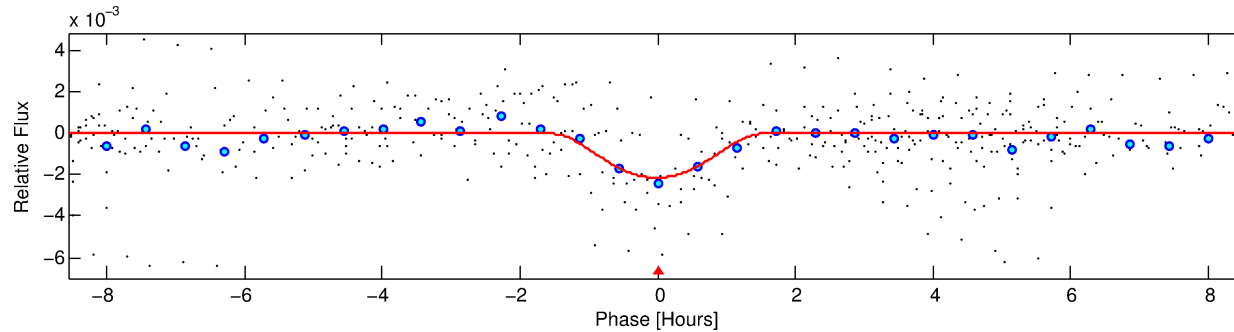
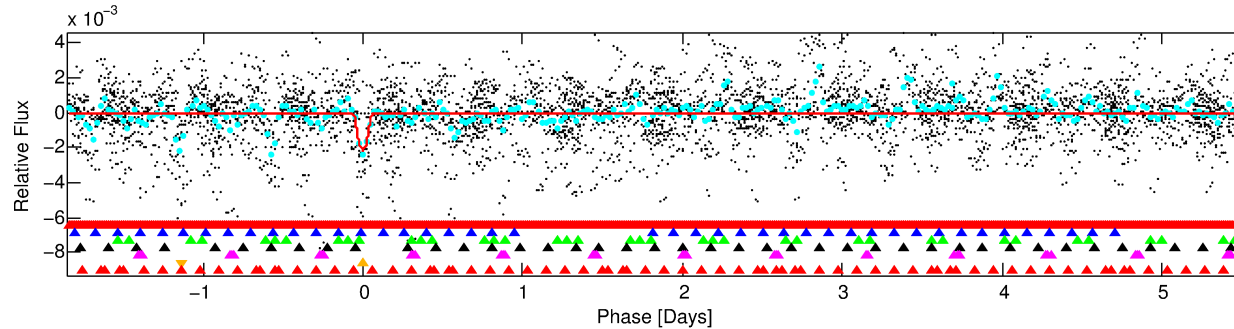
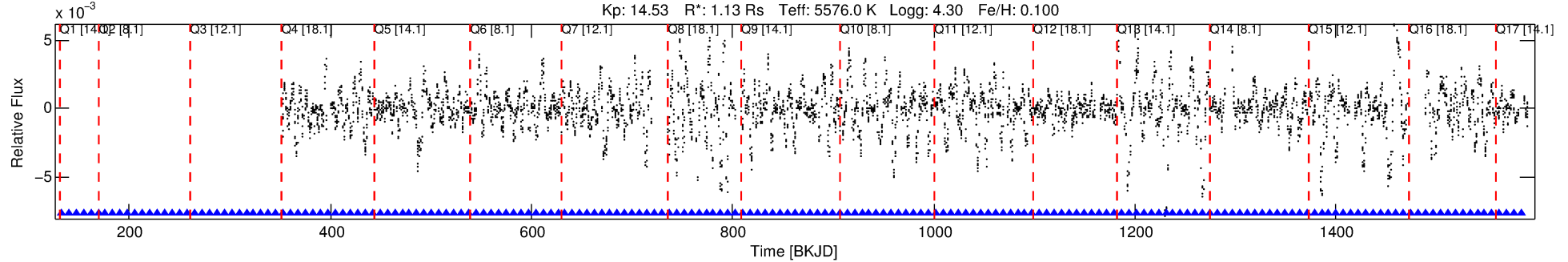
Ephemeris Match Information For 007116043-06

No Significant Match Found

DV One-Page Summary

KIC: 7116043 Candidate: 6 of 7 Period: 7.372 d
KOI: K06826 Corr: No Ephemeris Match

Kp: 14.53 R*: 1.13 Rs Teff: 5576.0 K Logg: 4.30 Fe/H: 0.100



DV Fit Results:

Period = 7.37226 [0.00020] d
Epoch = 132.3361 [0.0174] BKJD
Rp/R* = 0.0796 [0.2937]
a/R* = 8.28 [6.64]
b = 1.00 [0.44]
Seff = 212.46 [79.79]
Teq = 974 [91] K
Rp = 9.84 [36.38] Re
a = 0.0723 [0.0172] AU
Ag = 61.17 [451.84] [0.13σ]
Teffp = 4209 [7766] K [0.42σ]

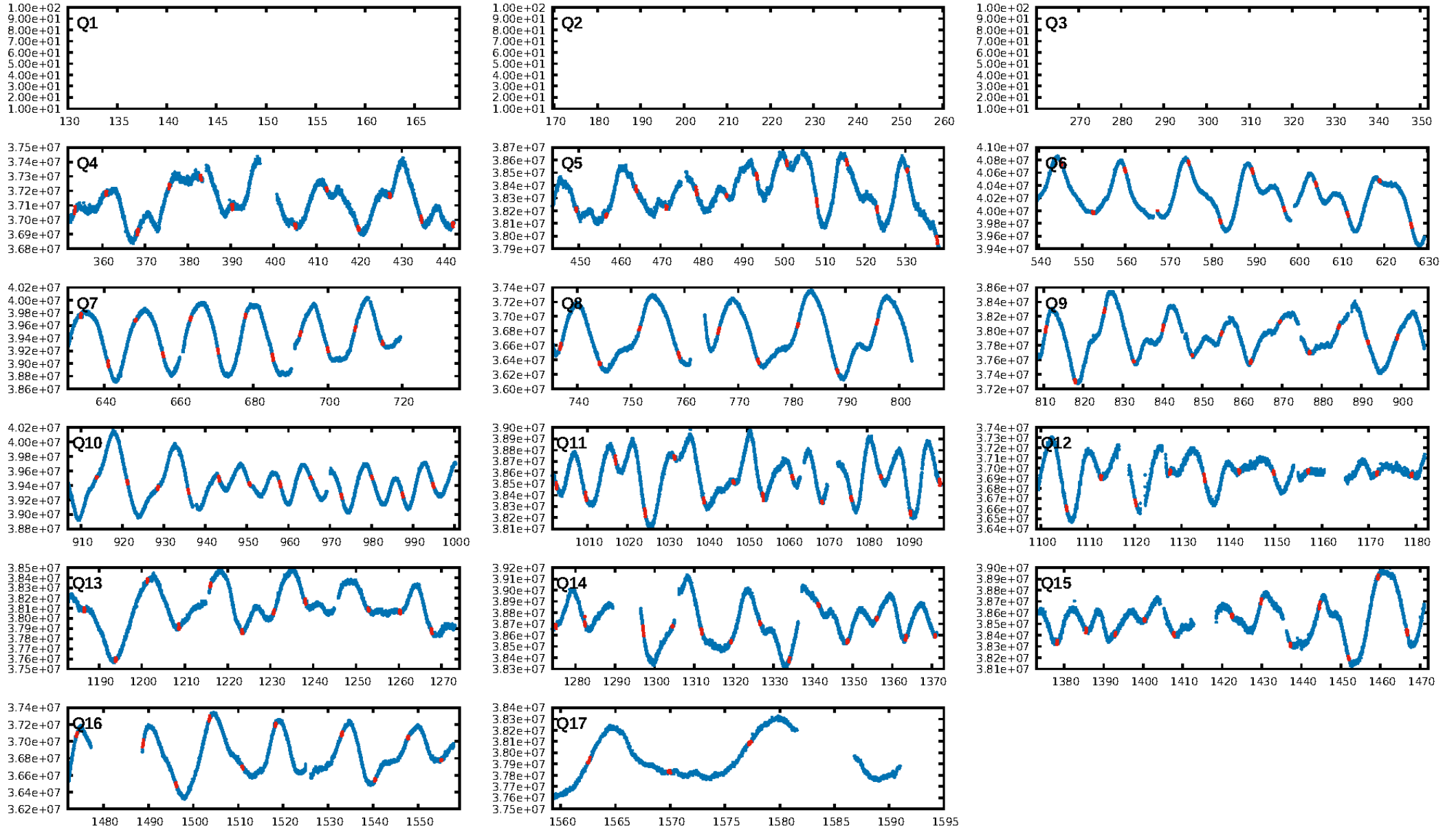
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [33.74σ]
LongPeriod-sig: 100.0% [78.54σ]
ModelChiSquare2-sig: 2.8%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [36/36]
GhostDiagnostic-chr: -1.974
Centroid-sig: 54.3%
Centroid-so: 3.107 arcsec [44.23σ]
OotOffset-rm: 1.446 arcsec [2.47σ]
KicOffset-rm: 6.020 arcsec [3.26σ]
OotOffset-st: 0/1/1/2 [4]
KicOffset-st: 0/1/1/2 [4]
DiffImageQuality-fgm: 0.50 [2/4]
DiffImageOverlap-fno: 0.00 [0/14]

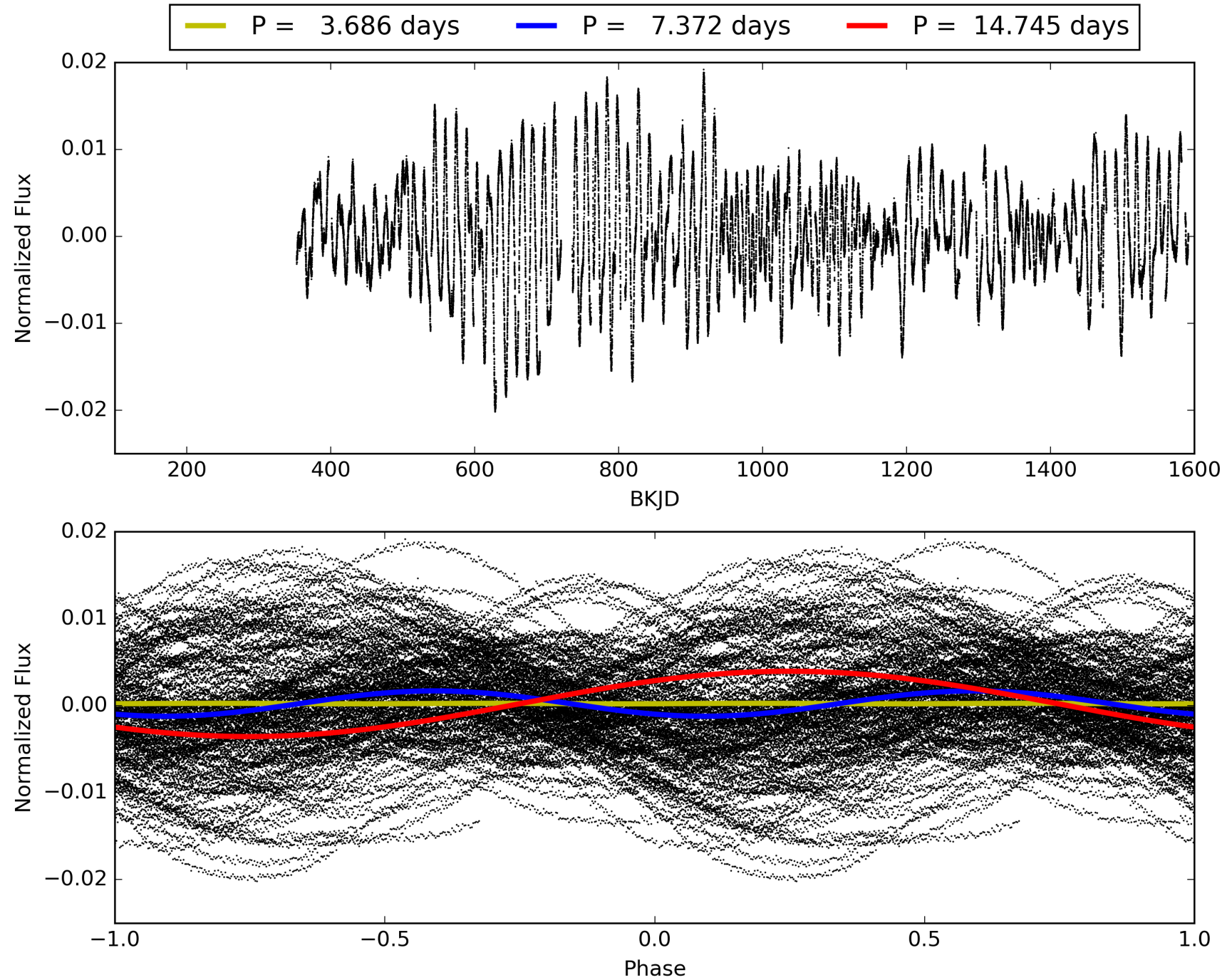
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 15:04:55 Z

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

TCE 007116043-06, PDC Light Curves

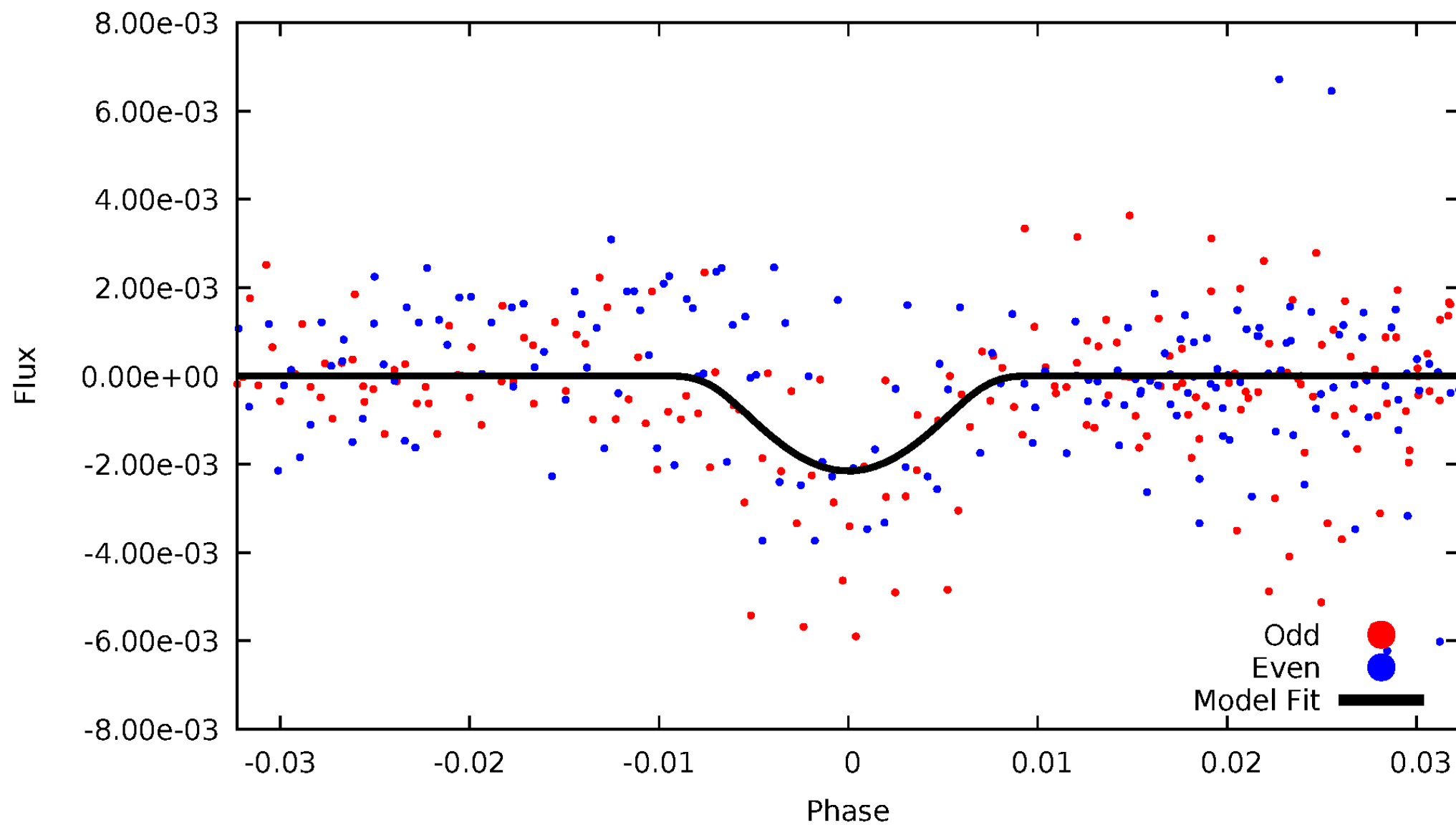


TCE 007116043-06



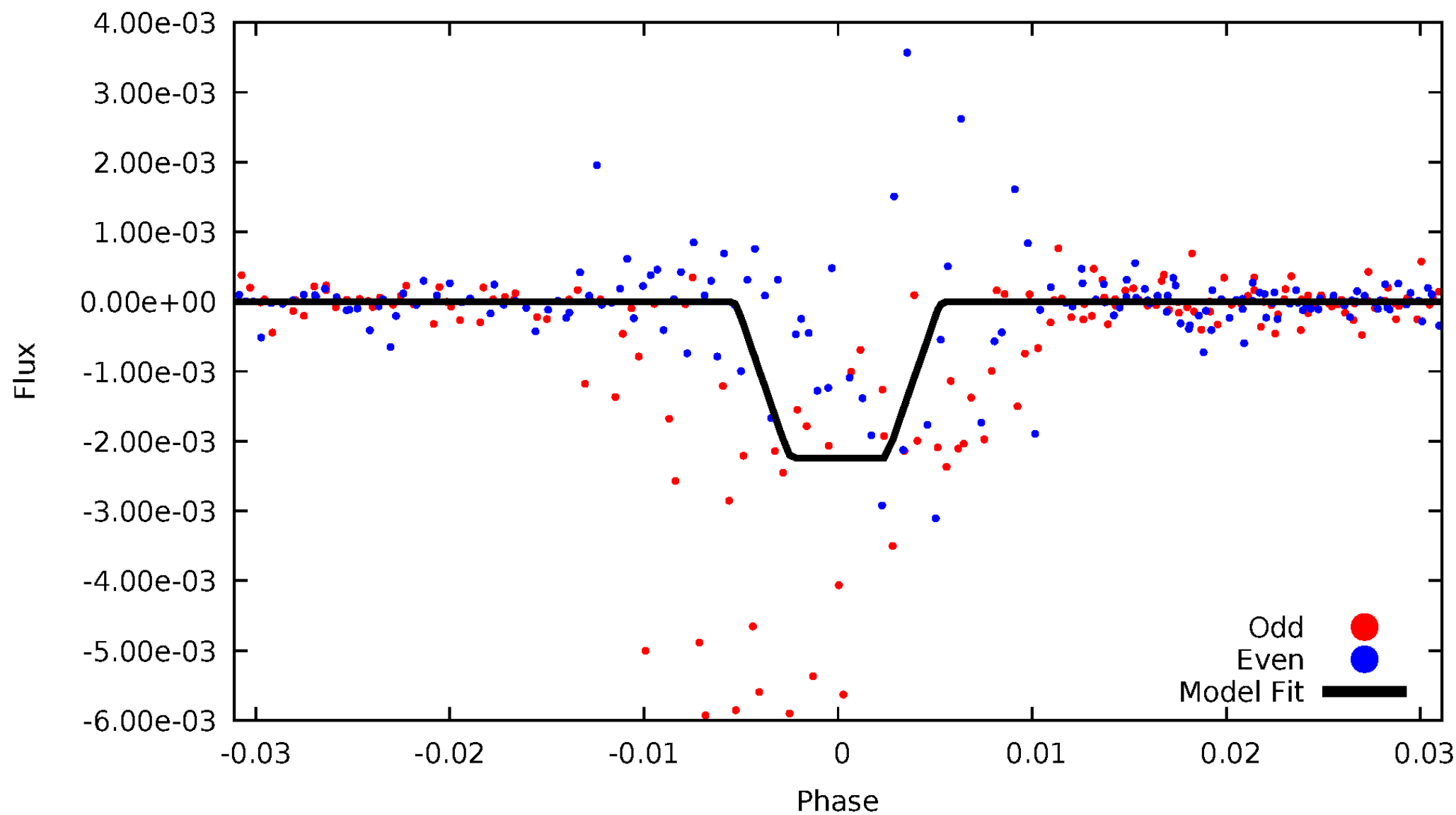
DV Odd/Even

TCE 007116043-06



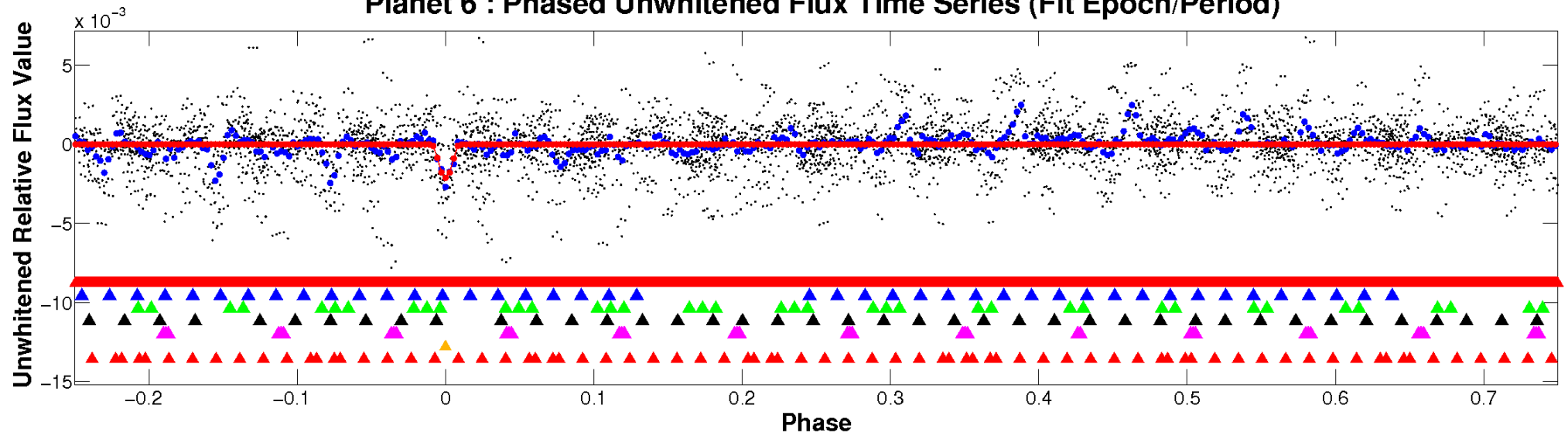
ALT Odd/Even

TCE 007116043-06

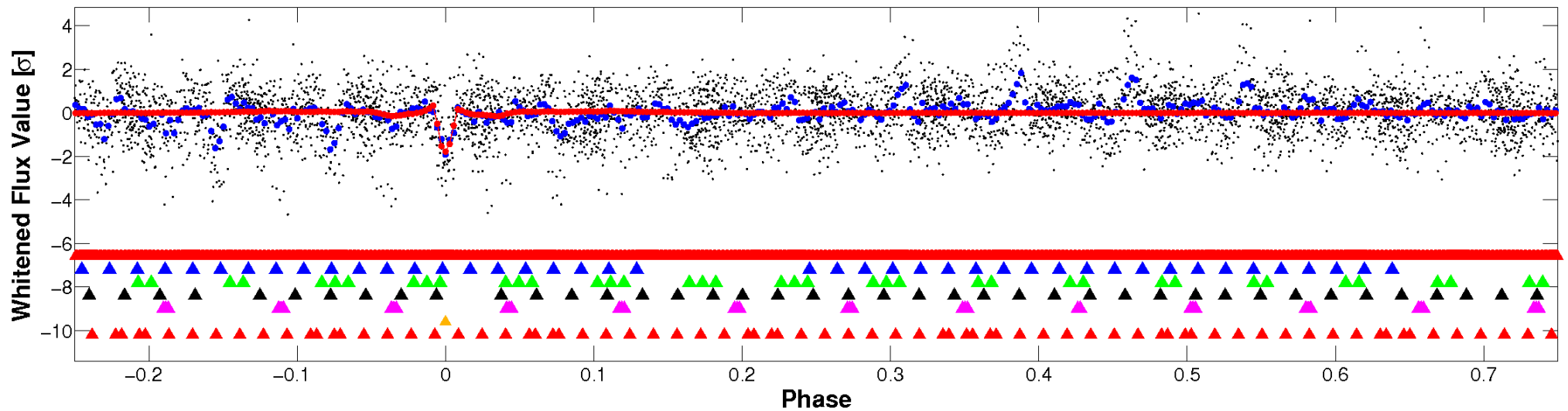


Non-Whitened Vs. Whitened Light Curve

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

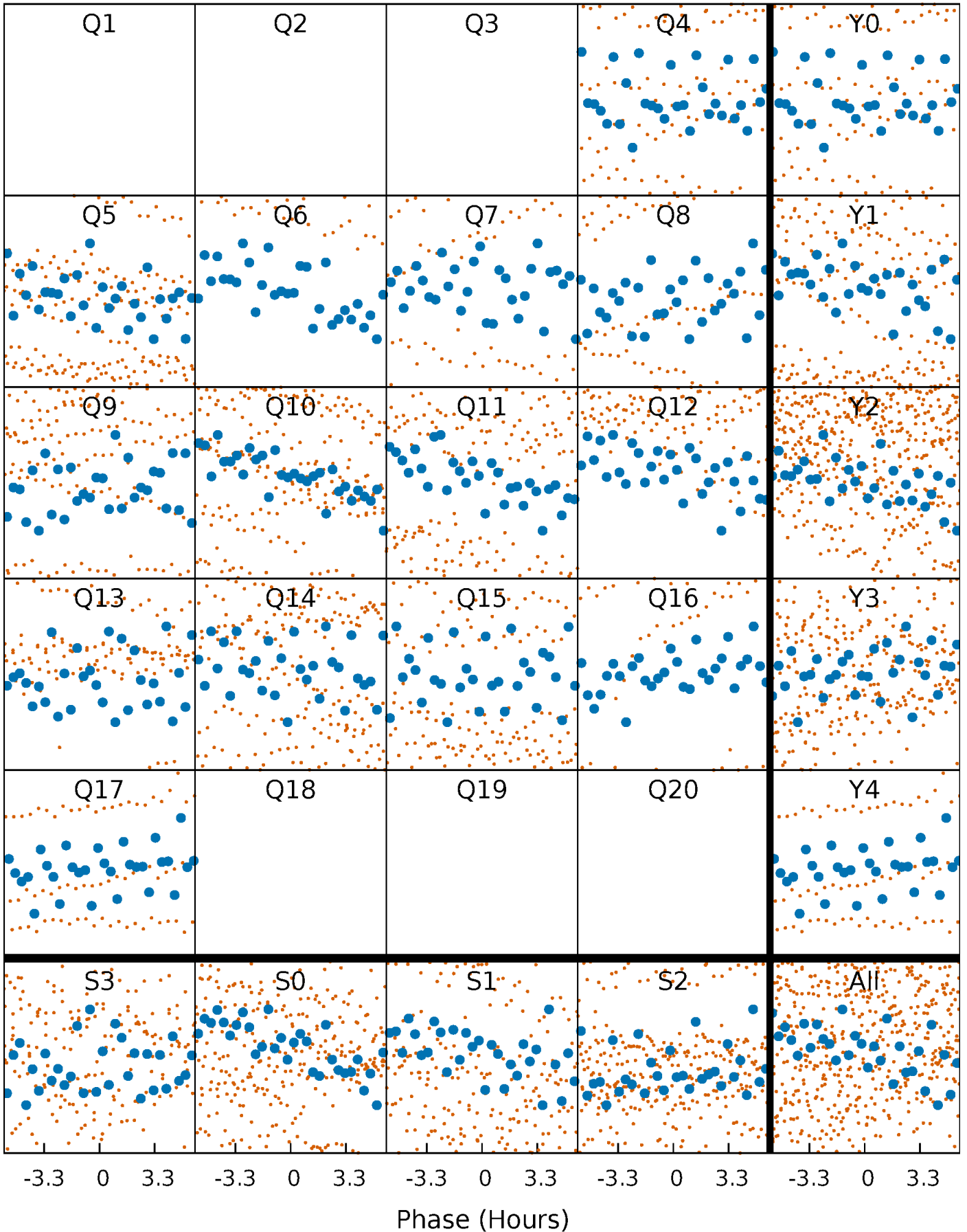


Planet 6 : Phased Whitened Flux Time Series (Fit Epoch/Period)



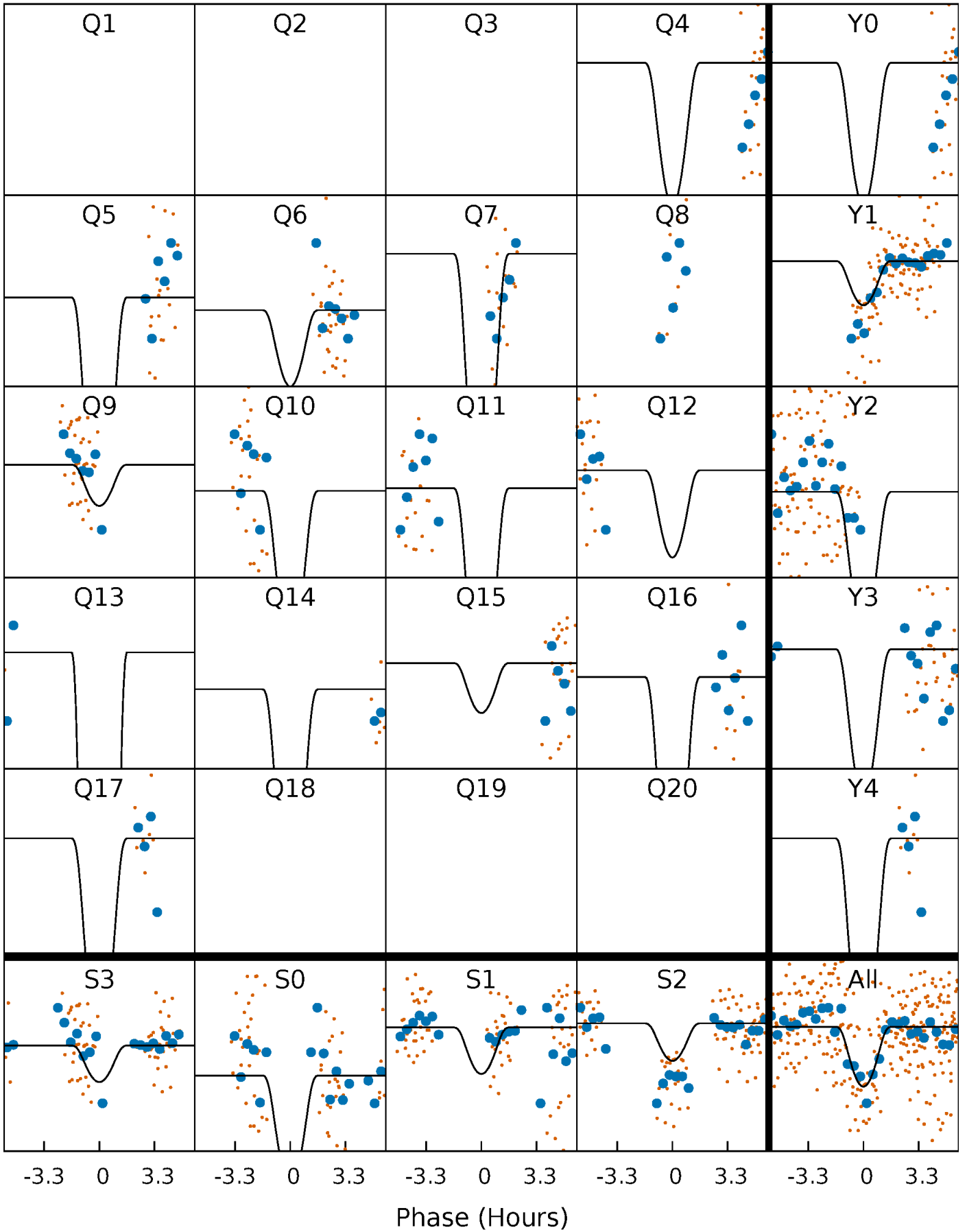
PDC Quarter-Phased Transit Curves

TCE 007116043-06 P= 7.372257 Days $T_0=132.336098$ (BKJD)



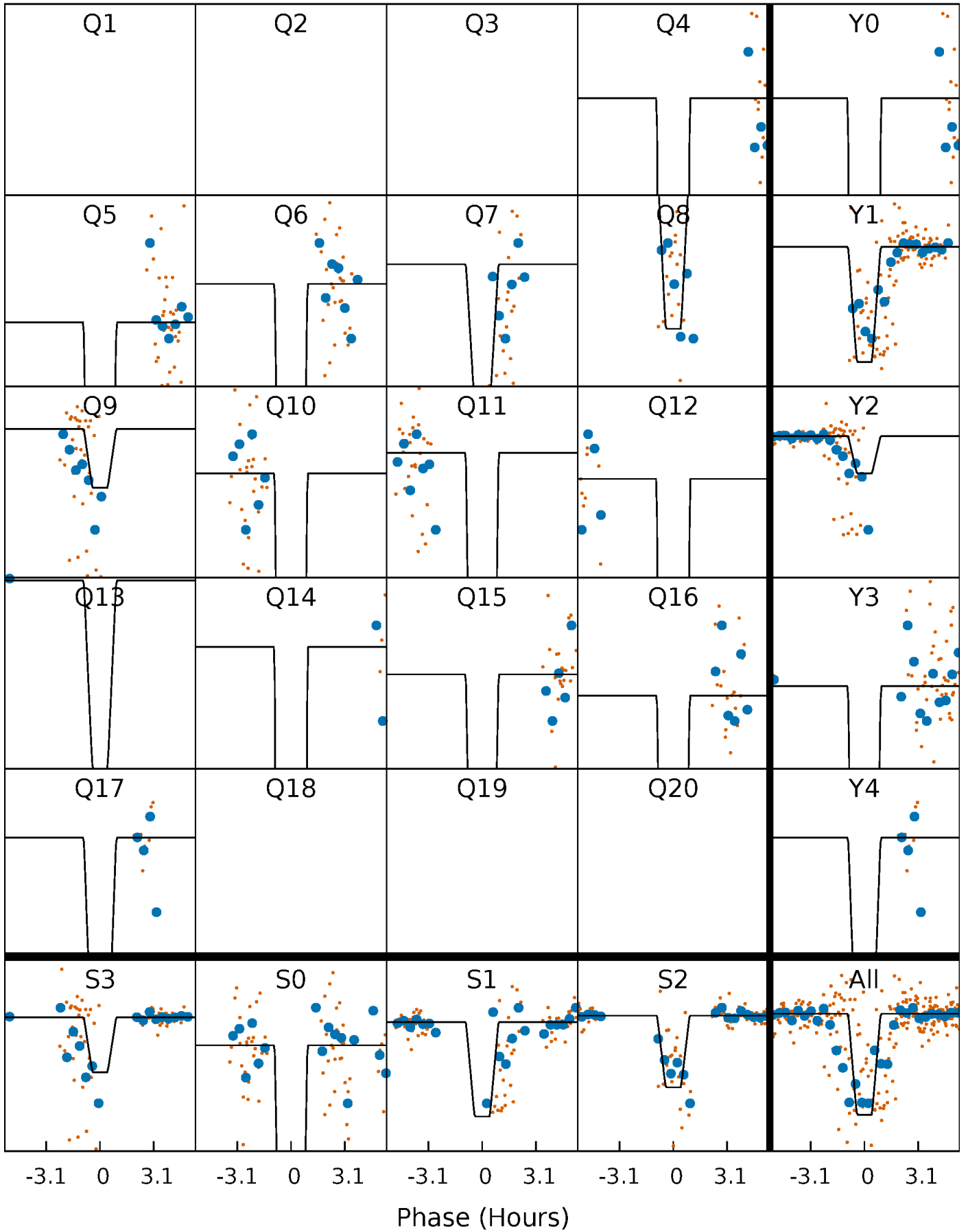
DV Quarter-Phased Transit Curves

TCE 007116043-06 P= 7.372257 Days $T_0=132.336098$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

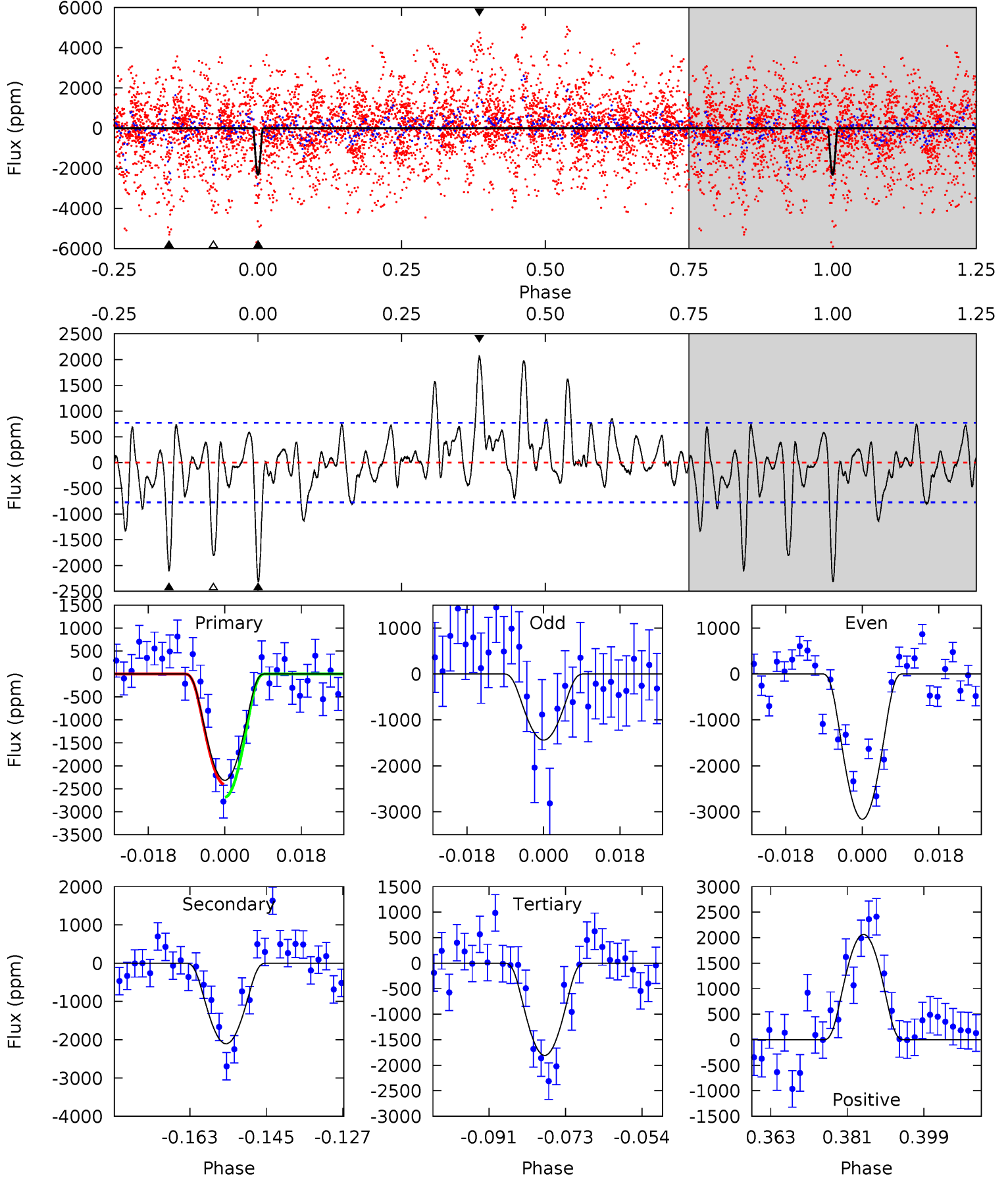
TCE 007116043-06 P= 7.372342 Days $T_0=132.326599$ (BKJD)



DV Model-Shift Uniqueness Test

007116043-06, P = 7.372257 Days, E = 132.336098 Days

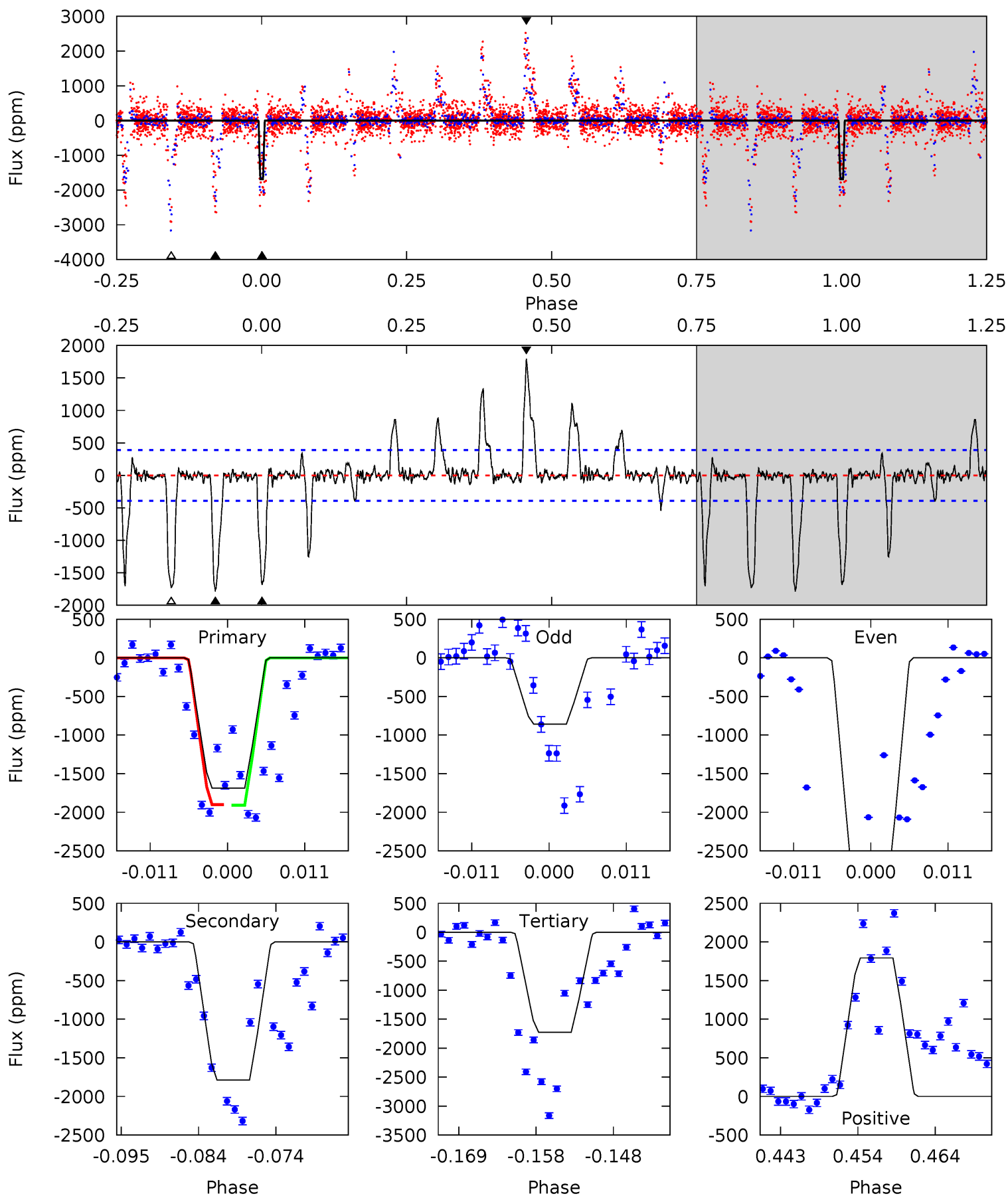
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.7	13.4	11.5	13.1	4.91	2.36	3.05	3.23	1.61	1.89	0.26	5.42	0.90	0.47	0.89



Alt Model-Shift Uniqueness Test

007116043-06, P = 7.372342 Days, E = 132.326599 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
21.7	22.9	22.2	23.0	5.02	2.56	3.20	-0.50	-1.37	0.78	-0.09	9.87	1.37	0.50	0



Stellar Parameters For KIC 007116043

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5576^{+183}_{-183}	$4.297^{+0.195}_{-0.195}$	$0.100^{+0.250}_{-0.300}$	$1.132^{+0.314}_{-0.257}$	$0.928^{+0.115}_{-0.084}$	$0.900^{+0.941}_{-0.466}$
	+3%/-3%	+5%/-5%	+250%/-300%	+28%/-23%	+12%/-9%	+105%/-52%
Source	KIC0	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 007116043-06 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-2106 ± 157	$27.26^{+27.96}_{-19.22}$	1366^{+112}_{-101}	3158^{+1636}_{-598}	$8.367^{+85.564}_{-6.426}$
Alt.	-1786 ± 78	$26.35^{+28.38}_{-18.26}$	1360^{+102}_{-102}	3082^{+1609}_{-578}	$7.470^{+72.346}_{-5.717}$

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

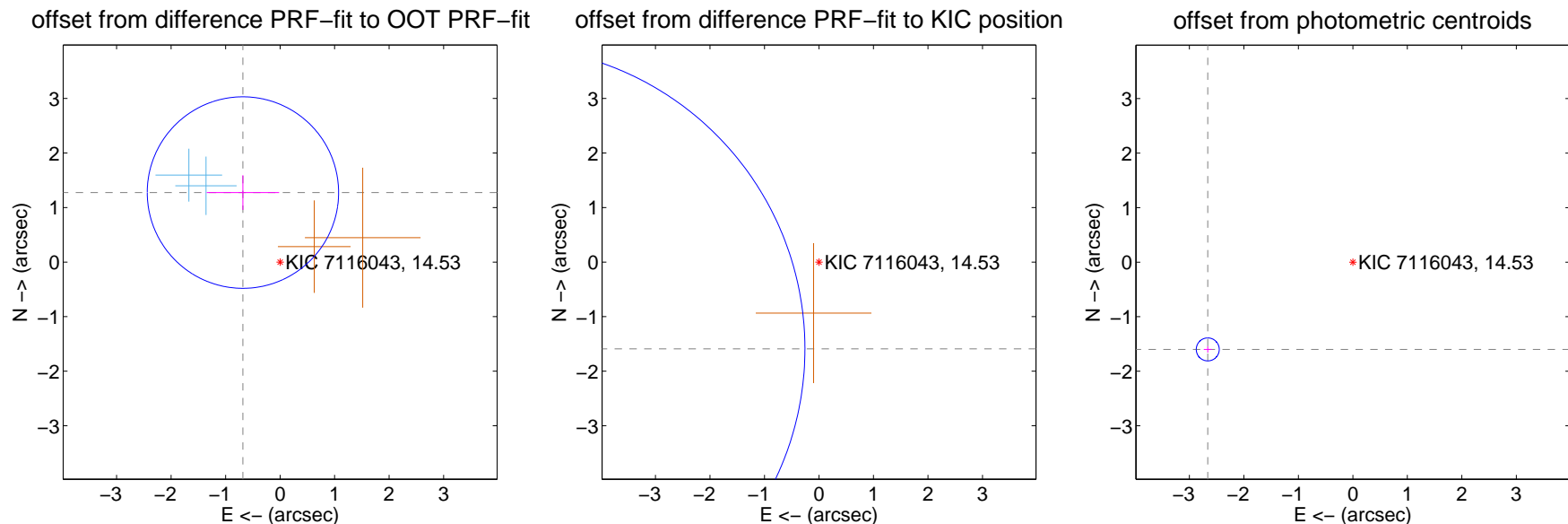
DV Centroid Data

Supplemental centroid analysis for 007116043-06. Kepler magnitude: 14.53. Transit SNR 9.53

There are 2 quarters with good PRF difference image offsets

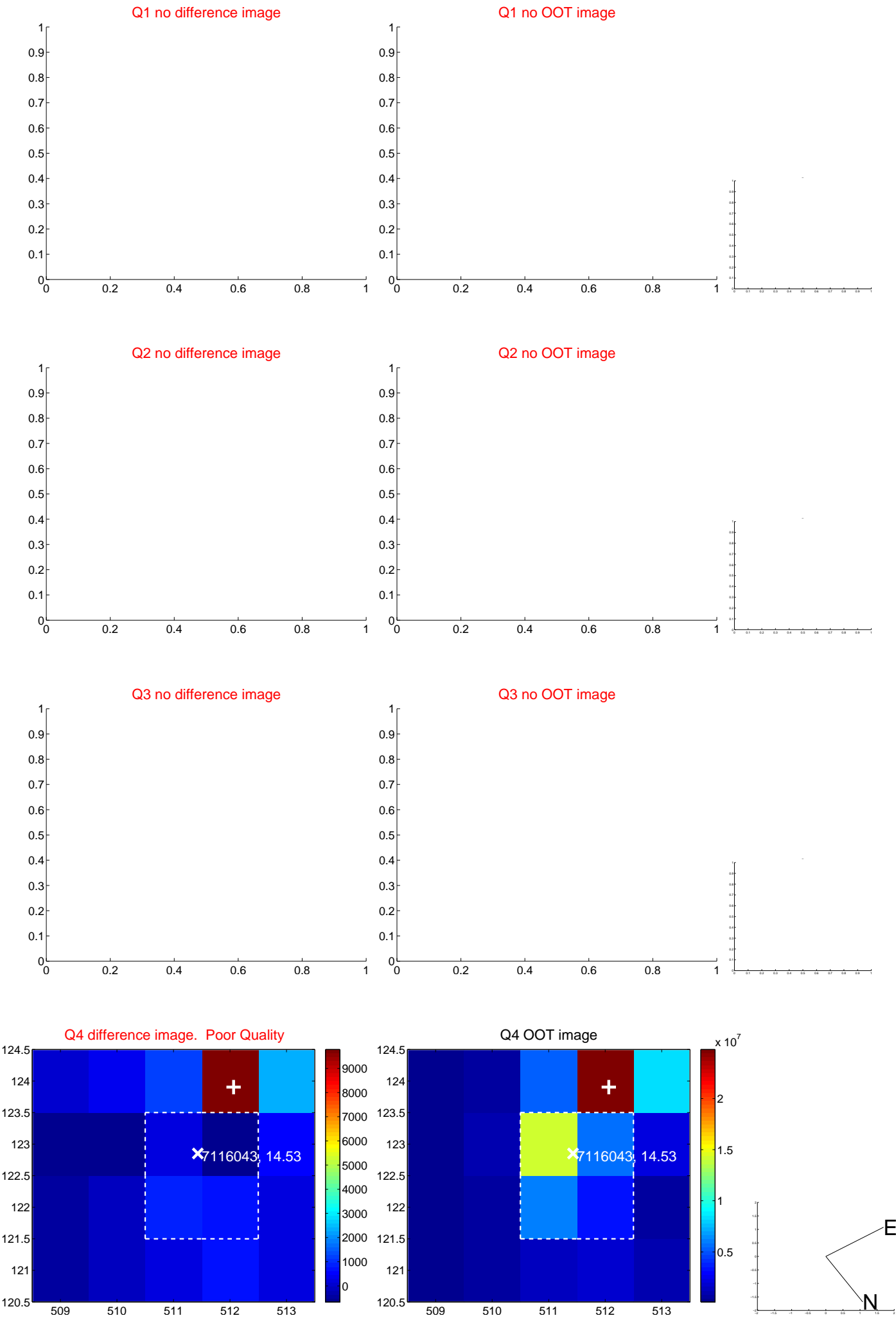
The OOT PRF centroid is offset from the target star catalog position by about 6.69 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.446 ± 0.585	2.47	0.682 ± 0.664	1.275 ± 0.318
PRF-fit source offset from KIC position	6.020 ± 1.849	3.26	5.806 ± 1.821	-1.591 ± 0.539
photometric centroid source offset	3.11 ± 0.07	44.23	2.66 ± 0.07	-1.60 ± 0.06

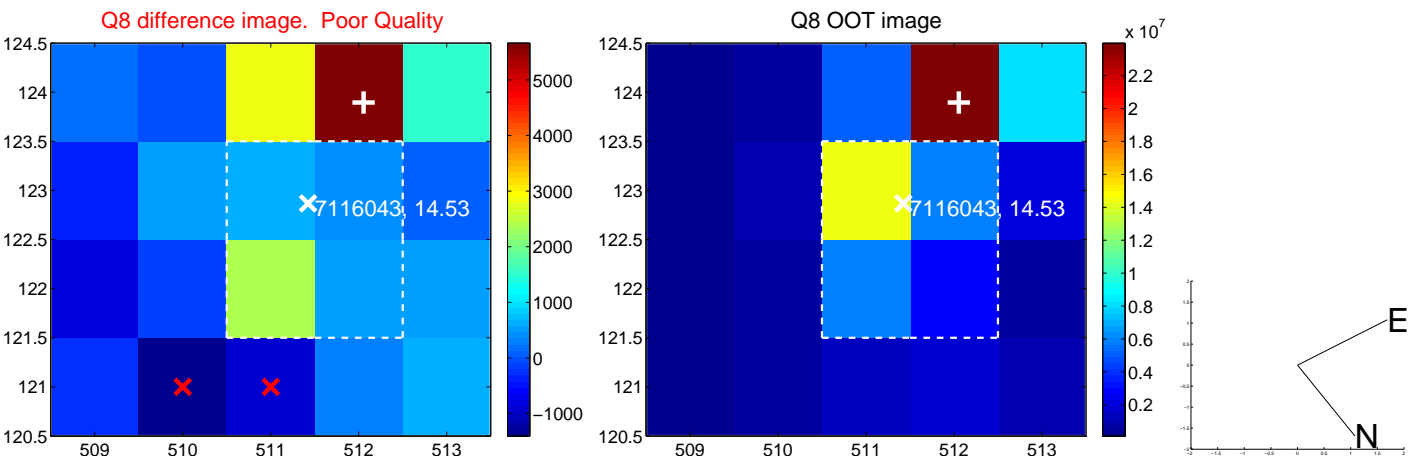
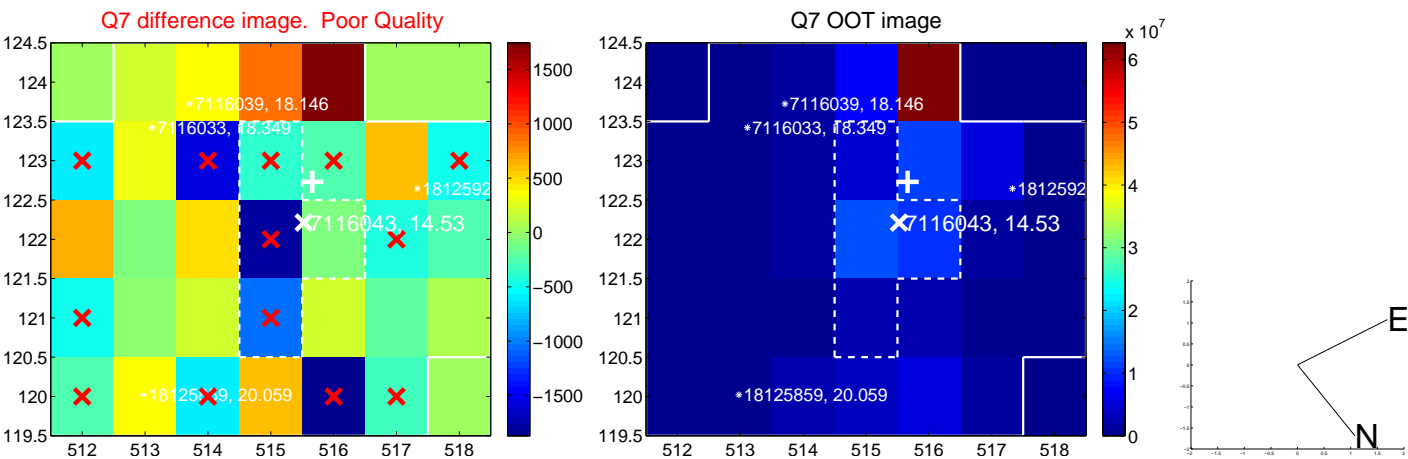
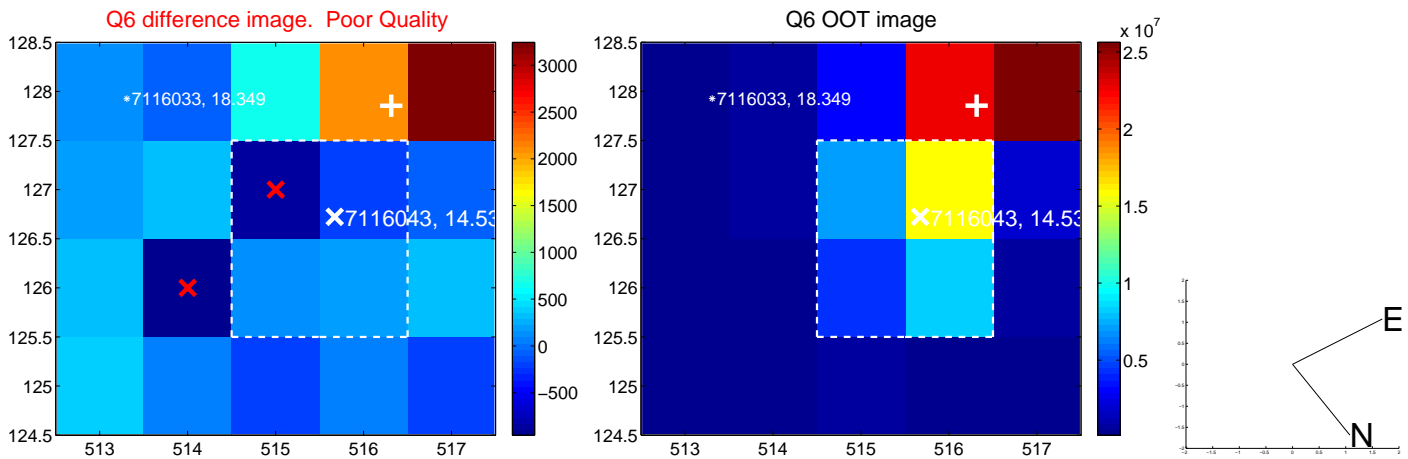
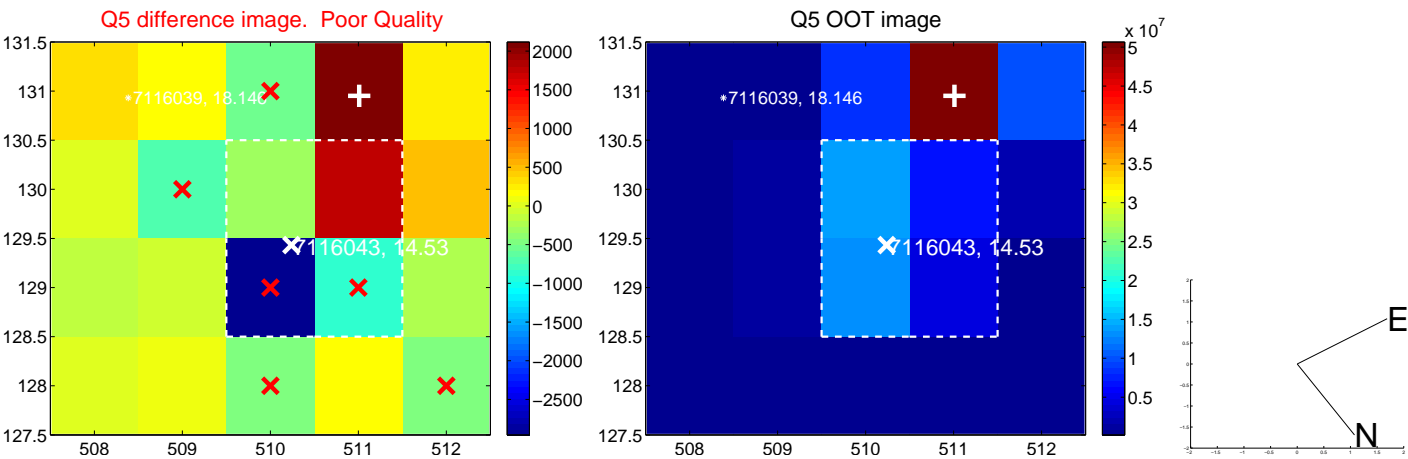


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

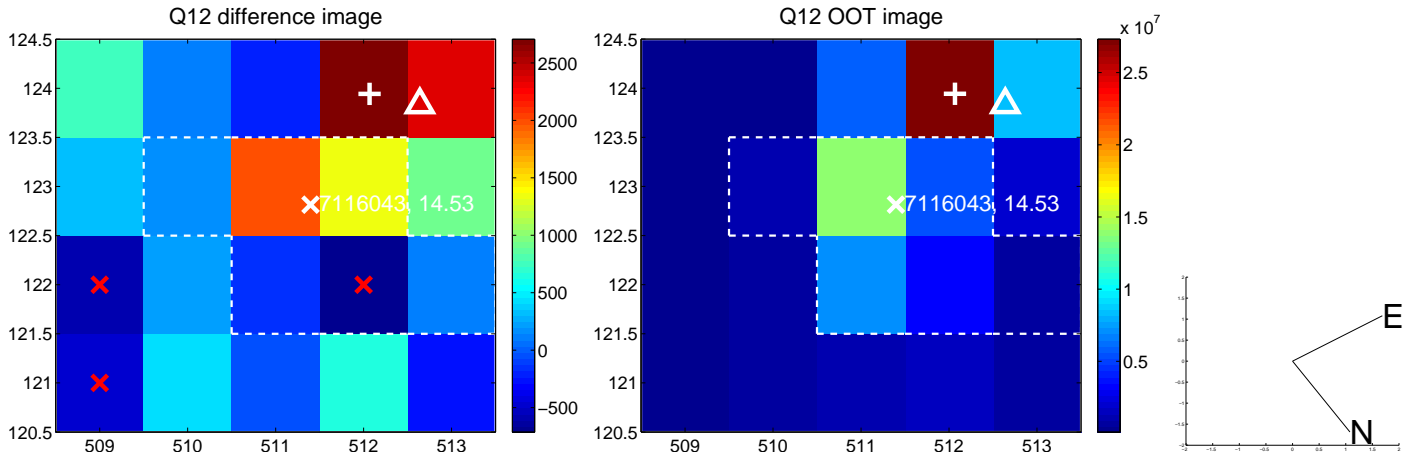
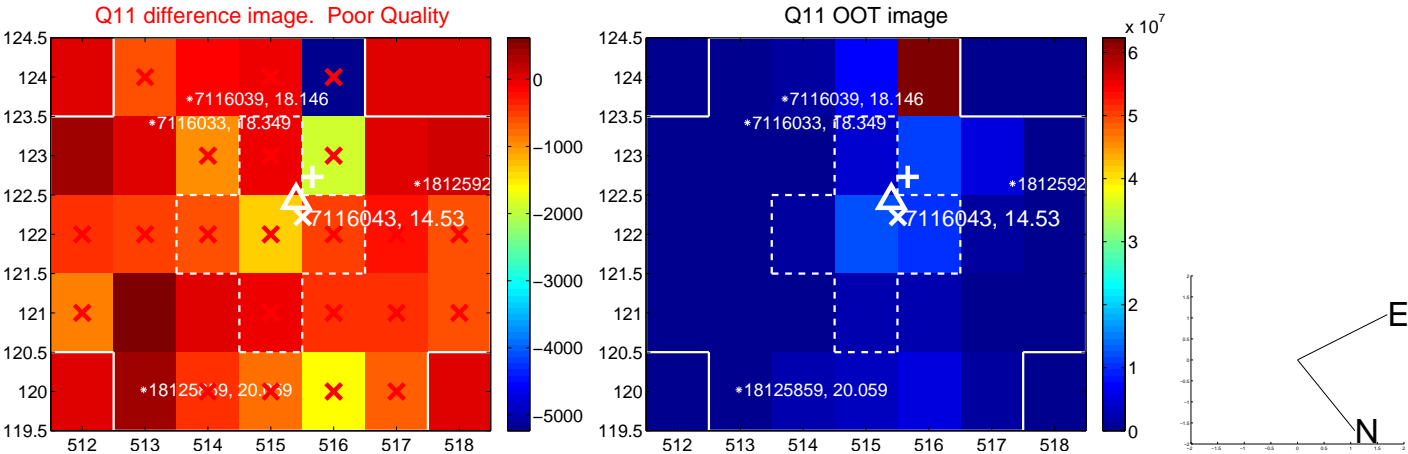
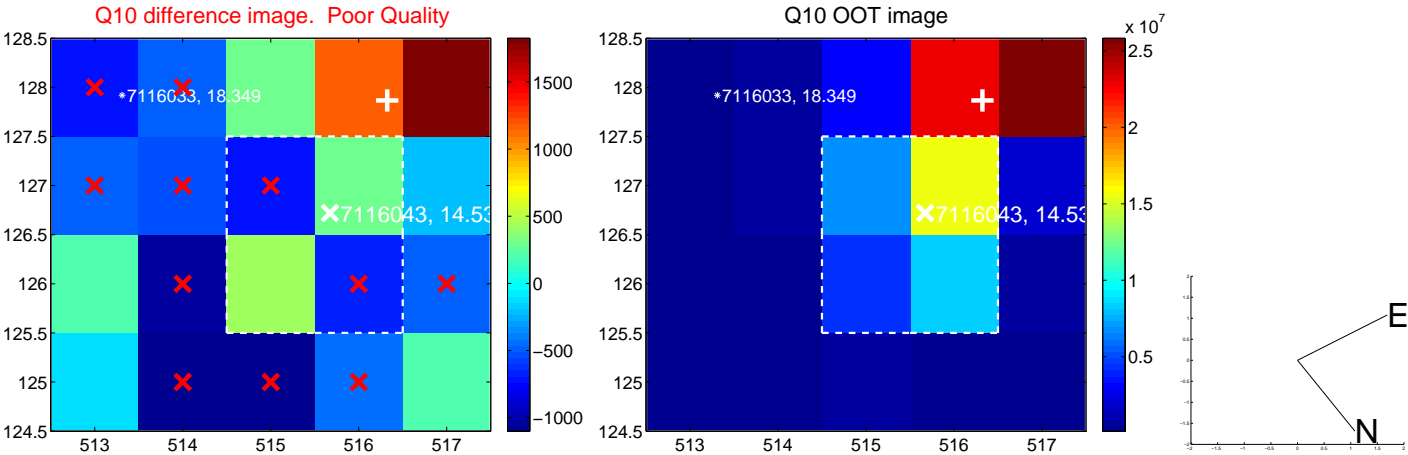
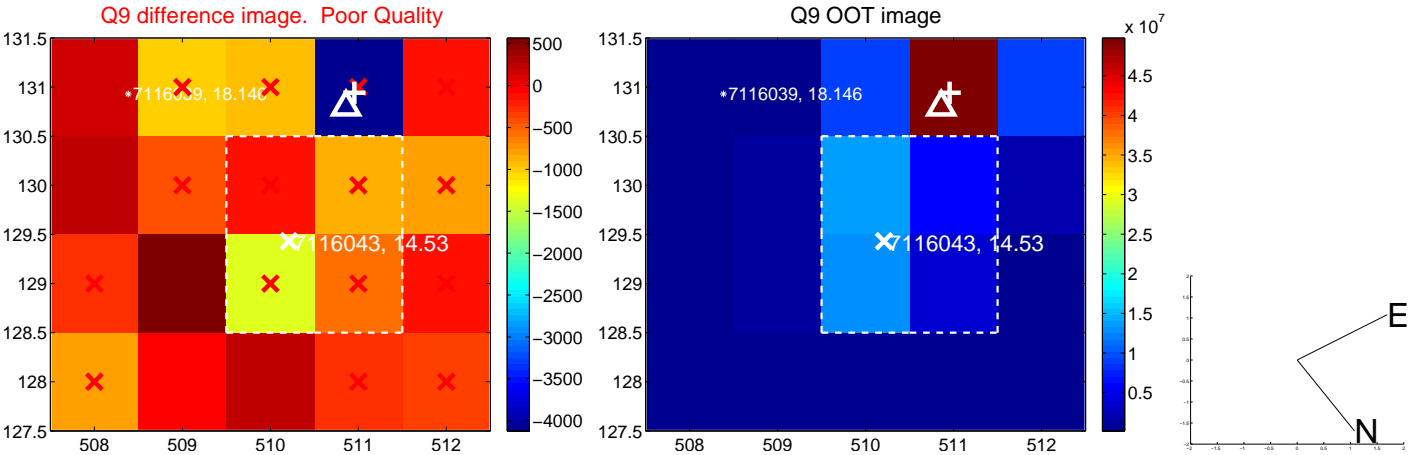
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



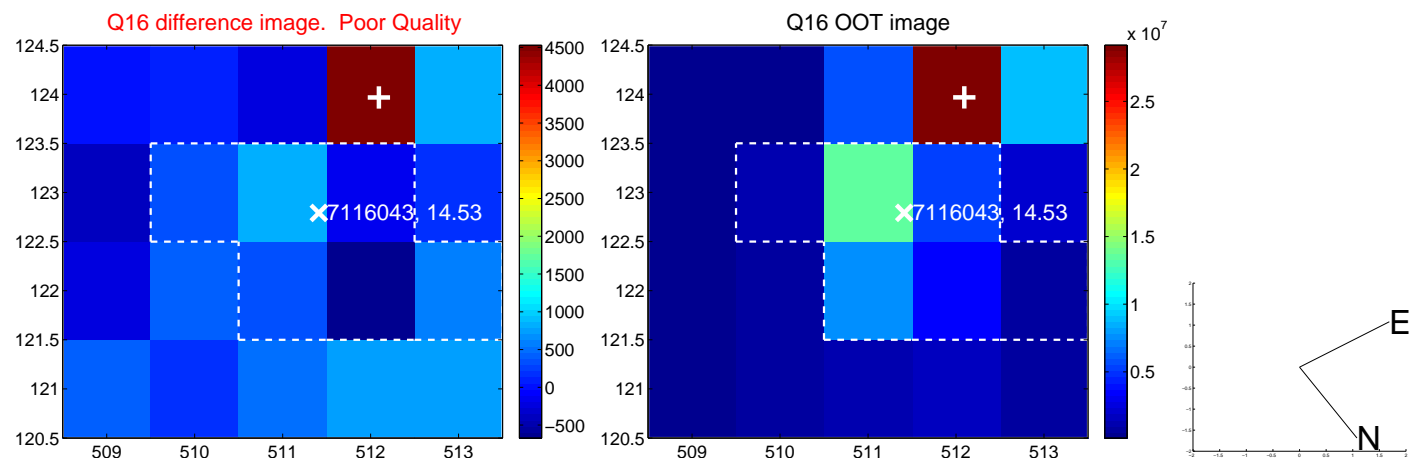
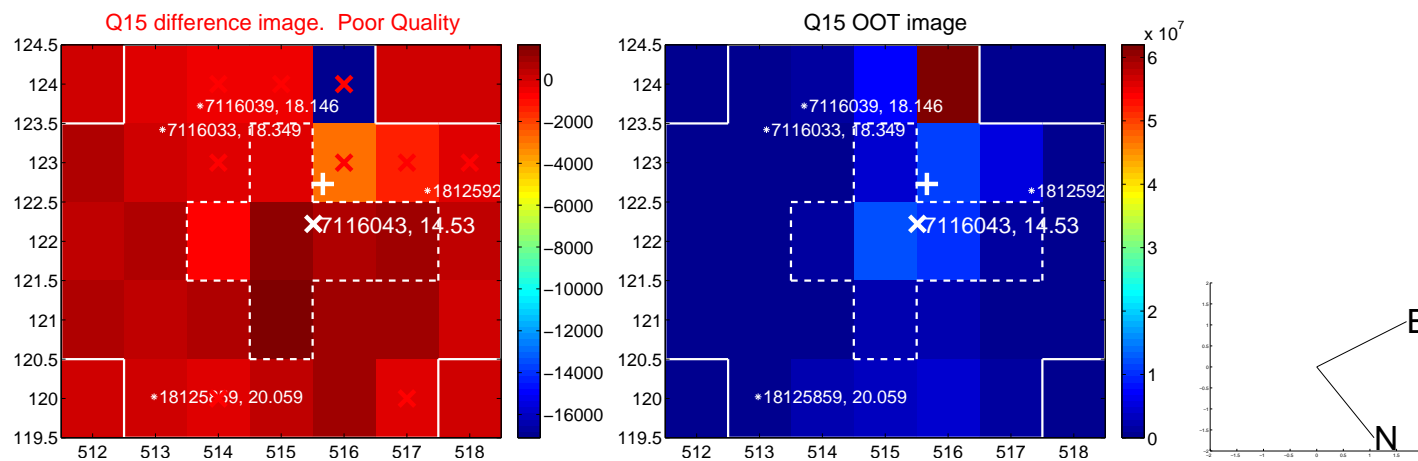
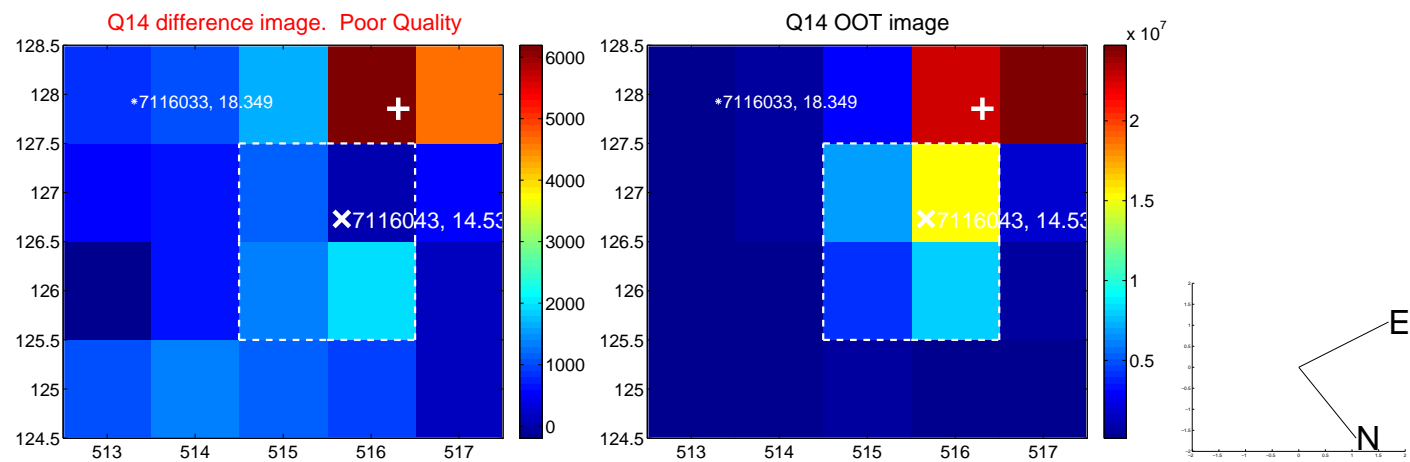
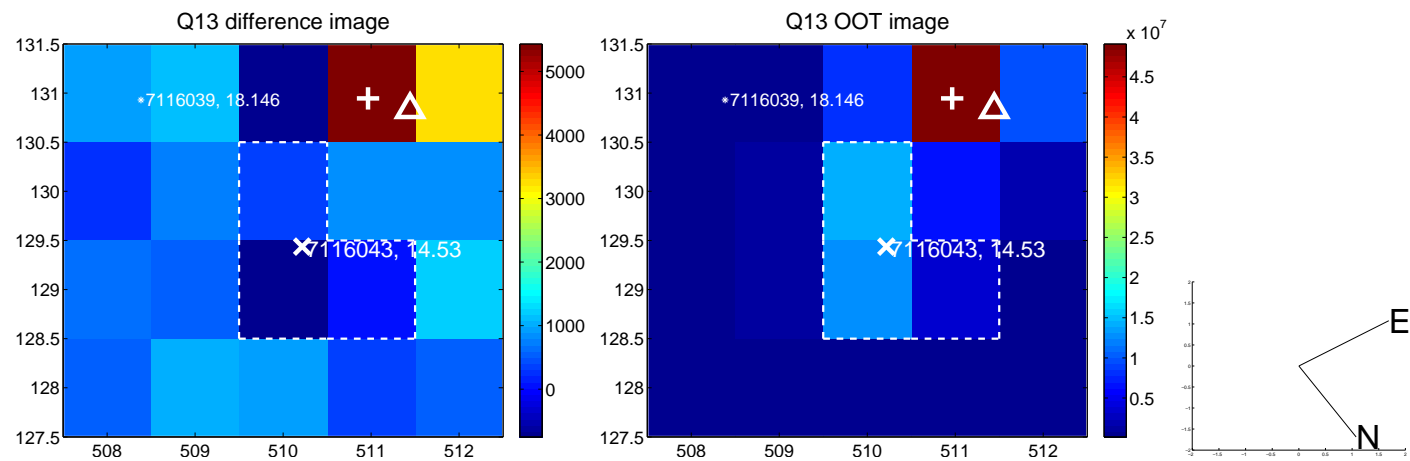
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



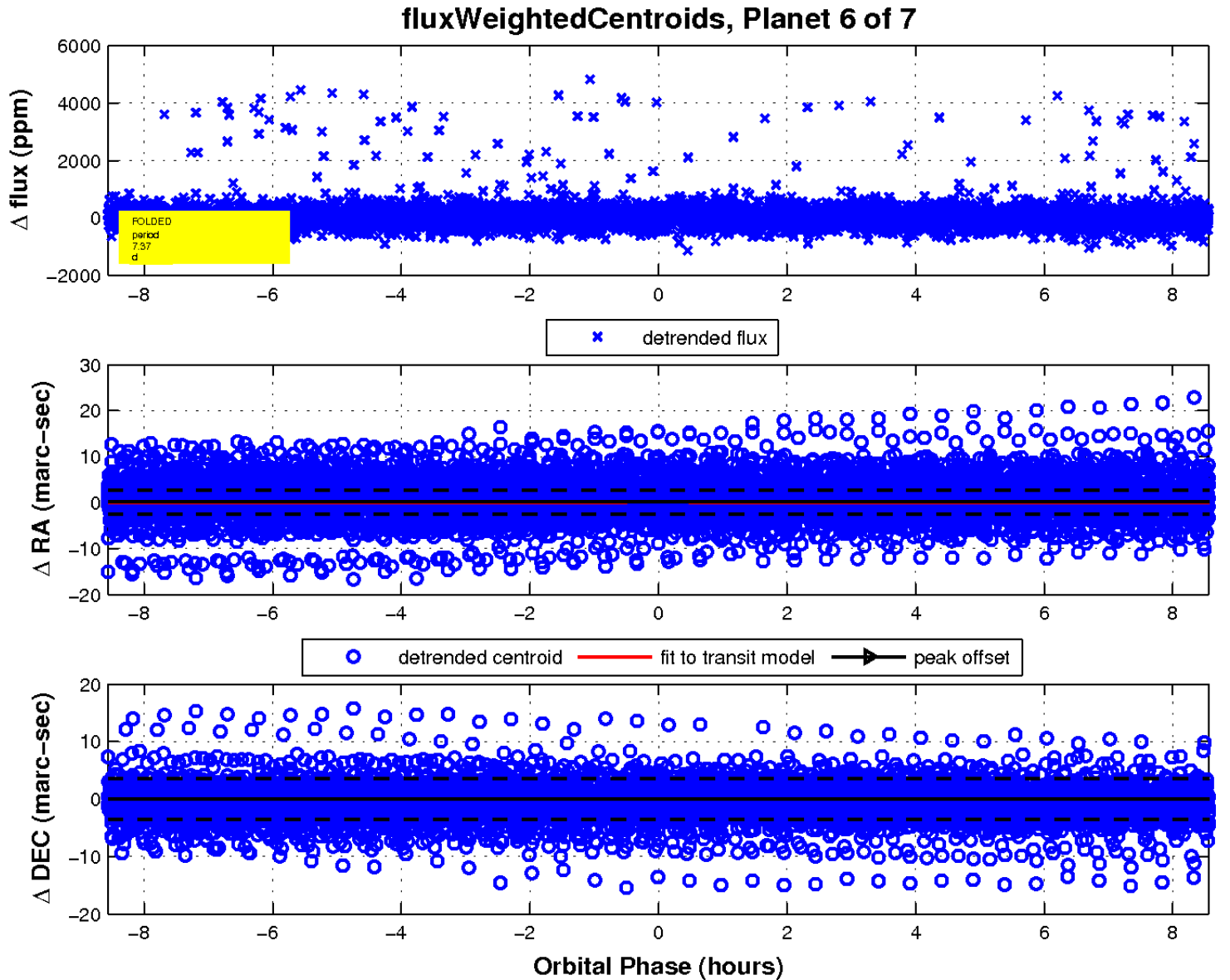
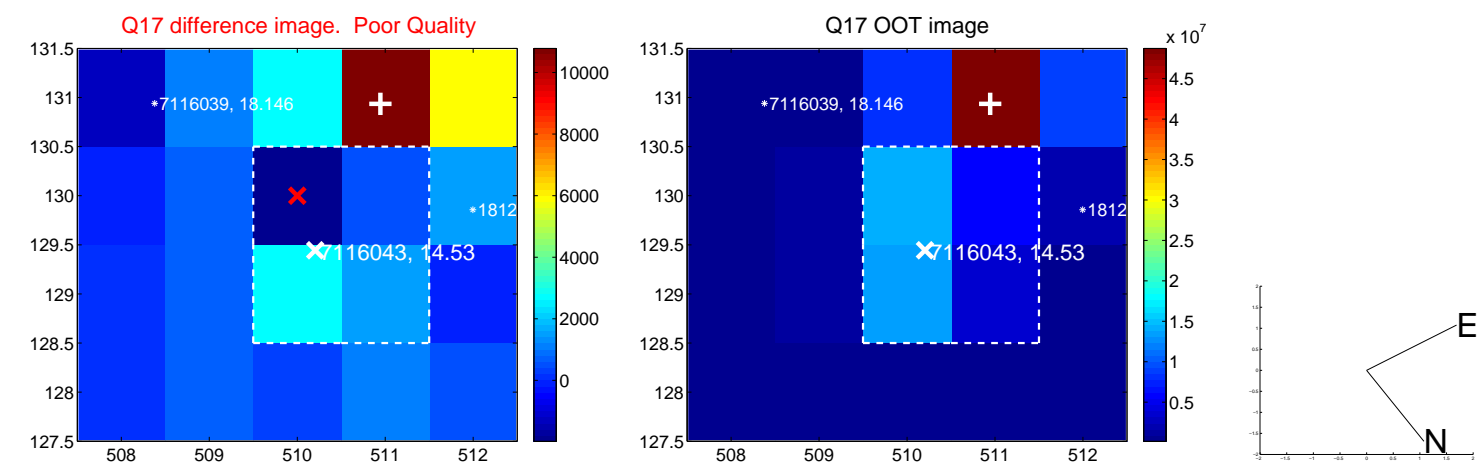
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



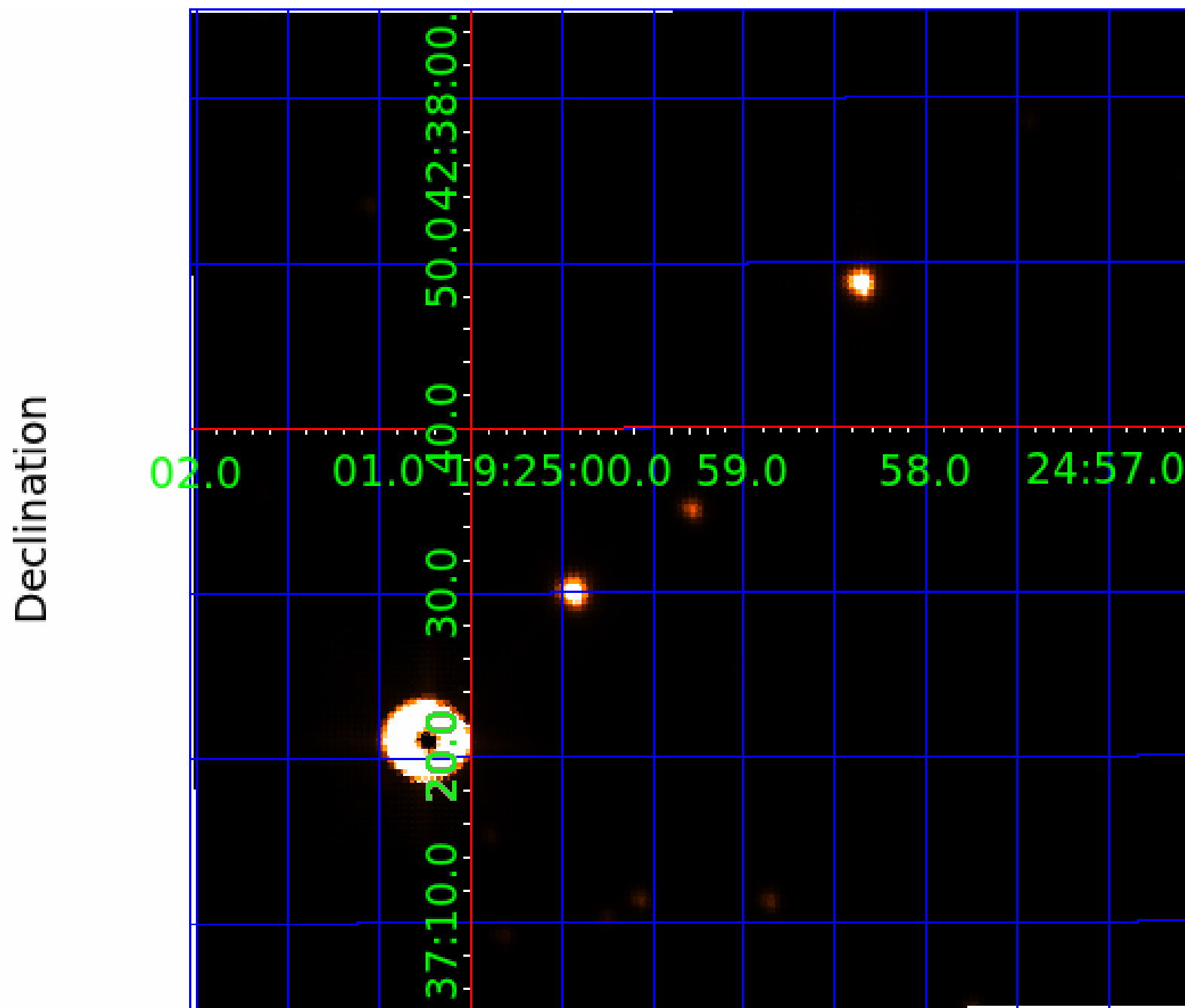
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 007116043

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})
007116043-01	OBS	6826.01	0.566776	131.845856	42.4	3.909	11.5	13.0	1.13	5576	0.76	6499.31
007116043-03	OBS	No	37.317954	146.597466	2842.0	1.841	10.6	8.0	1.13	5576	6.53	24.45
007116043-05	OBS	No	37.994544	166.125687	3934.9	3.182	11.3	8.4	1.13	5576	9.13	23.87
007116043-06	OBS	No	7.372257	132.336098	2150.6	2.855	10.3	9.5	1.13	5576	9.84	212.46
007116043-07	OBS	No	18.974014	149.582936	3458.6	2.102	10.8	8.8	1.13	5576	11.83	60.24

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007116043-01	OBS	FP	0.00	0	0	1	1	CENT_FEW_DIFFS—HALO_GHOST—EPHEM_MATCH
007116043-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_TER_ALT—MOD_POS_ALT—CENT_RESOLVED_OFFSET
007116043-05	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_POS_ALT—CENT_RESOLVED_OFFSET—HALO_GHOST
007116043-06	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_DV—MOD_TER_ALT—MOD_POS_ALT—CENT_RESOLVED_OFFSET
007116043-07	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—CENT_RESOLVED_OFFSET—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.

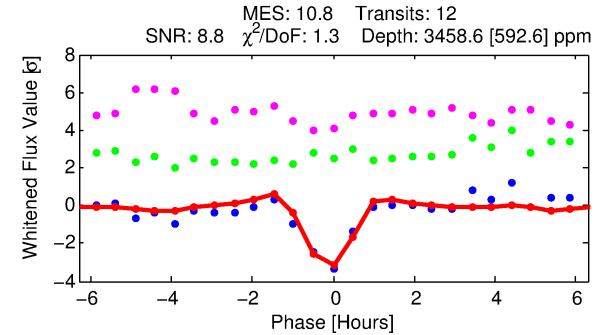
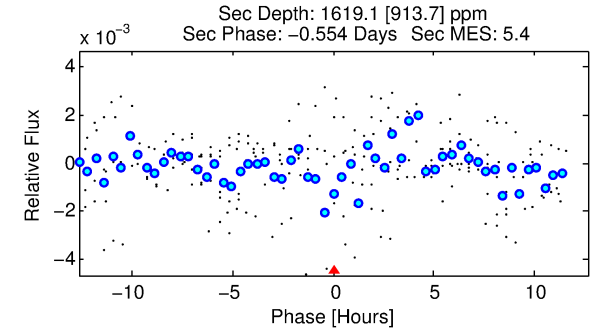
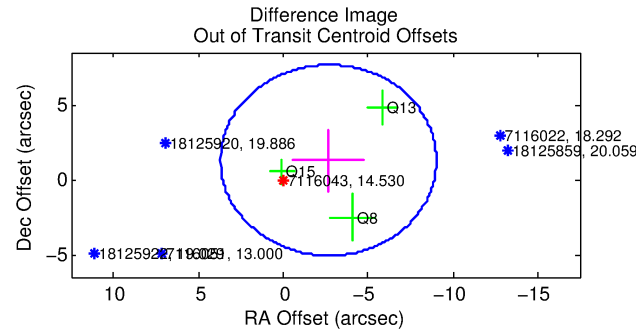
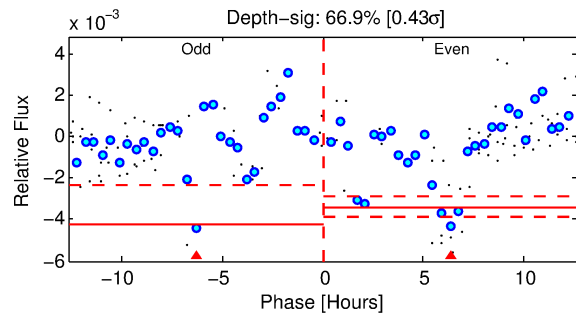
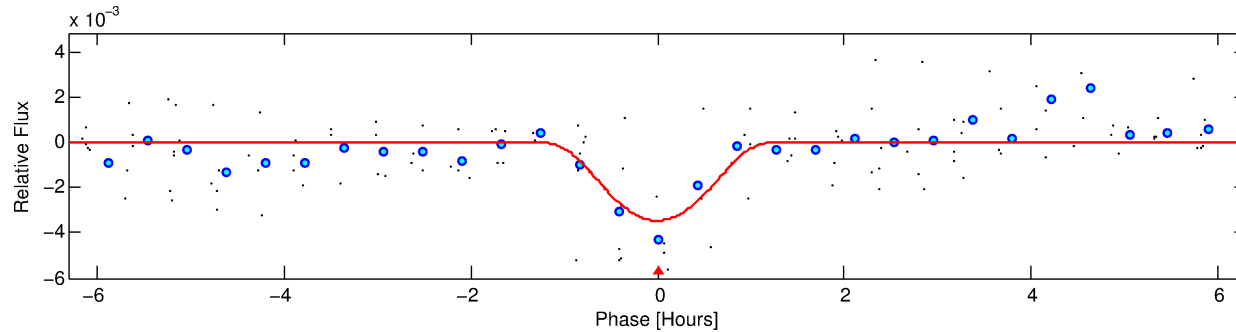
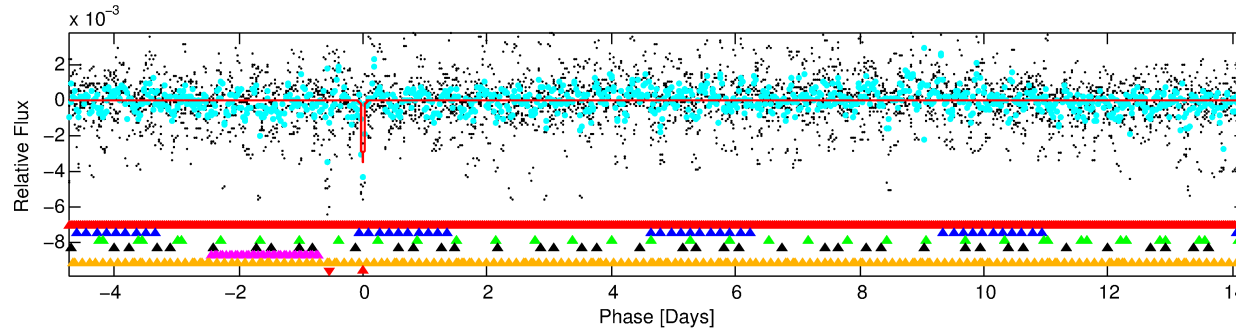
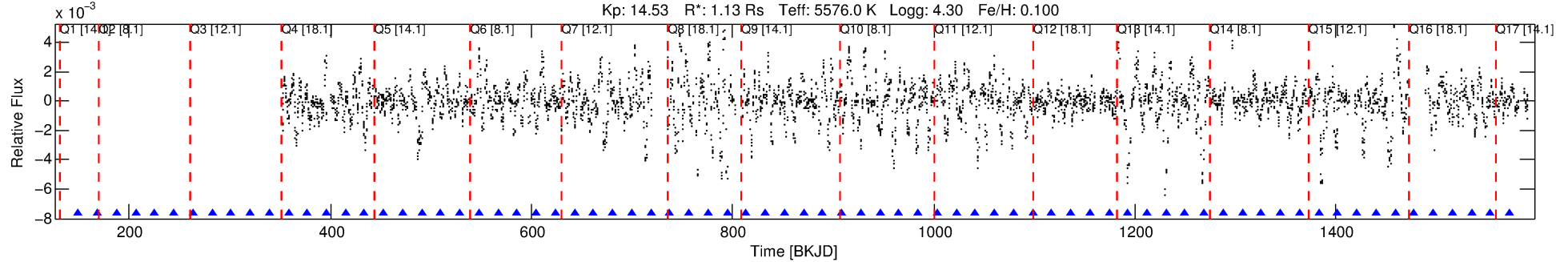
Ephemeris Match Information For 007116043-07

No Significant Match Found

DV One-Page Summary

KIC: 7116043 Candidate: 7 of 7 Period: 18.974 d
KOI: K06826 Corr: No Ephemeris Match

Kp: 14.53 R*: 1.13 Rs Teff: 5576.0 K Logg: 4.30 Fe/H: 0.100



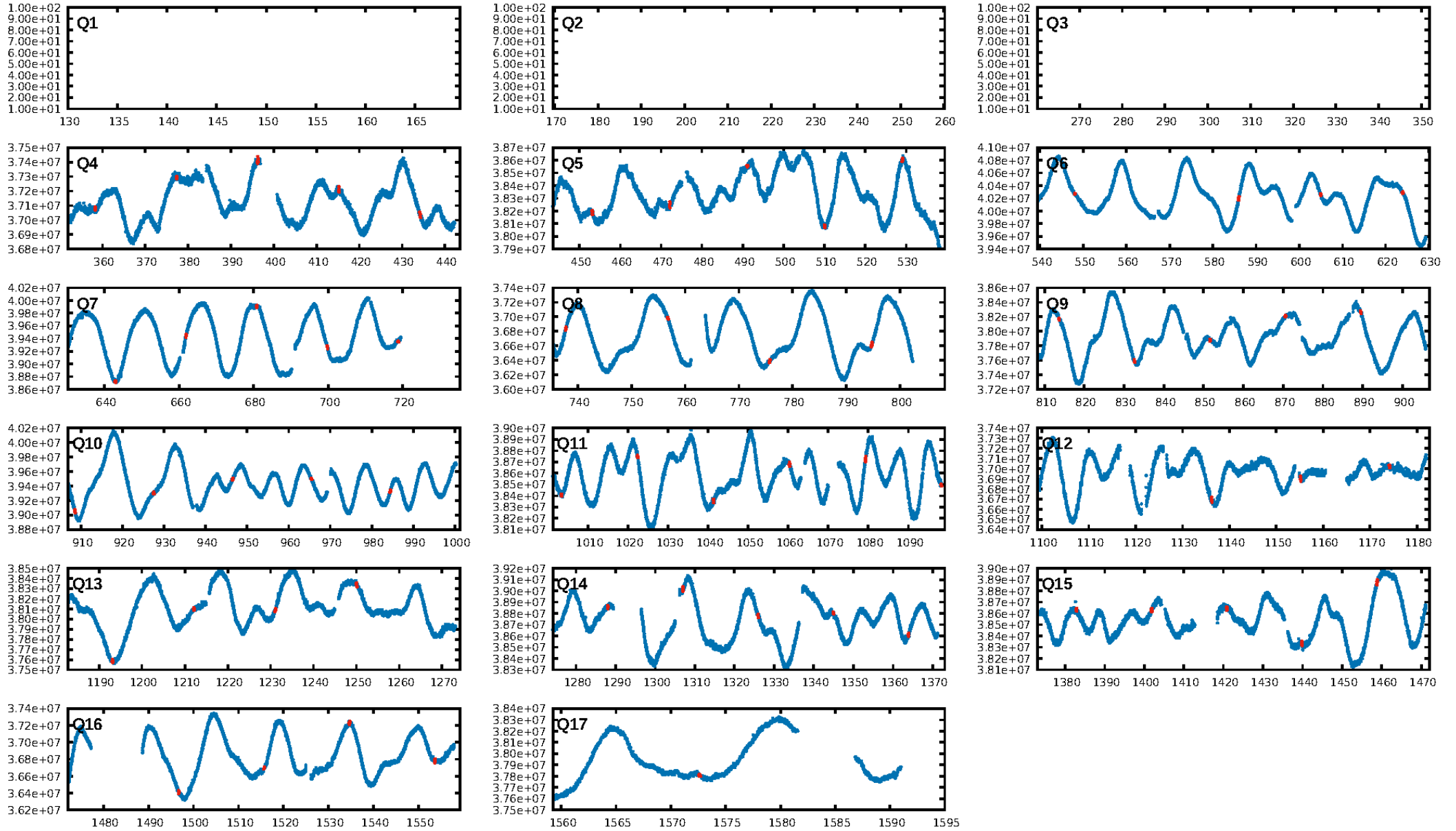
DV Fit Results:

Period = 18.97401 [0.00014] d
Epoch = 149.5829 [0.0062] BKJD
Rp/R* = 0.0958 [0.3936]
a/R* = 32.55 [28.94]
b = 0.99 [0.60]
Seff = 60.24 [22.62]
Teq = 710 [67] K
Rp = 11.83 [48.73] Re
a = 0.1357 [0.0323] AU
Ag = 117.24 [966.64] [0.12σ]
Teffp = 3614 [7444] K [0.39σ]

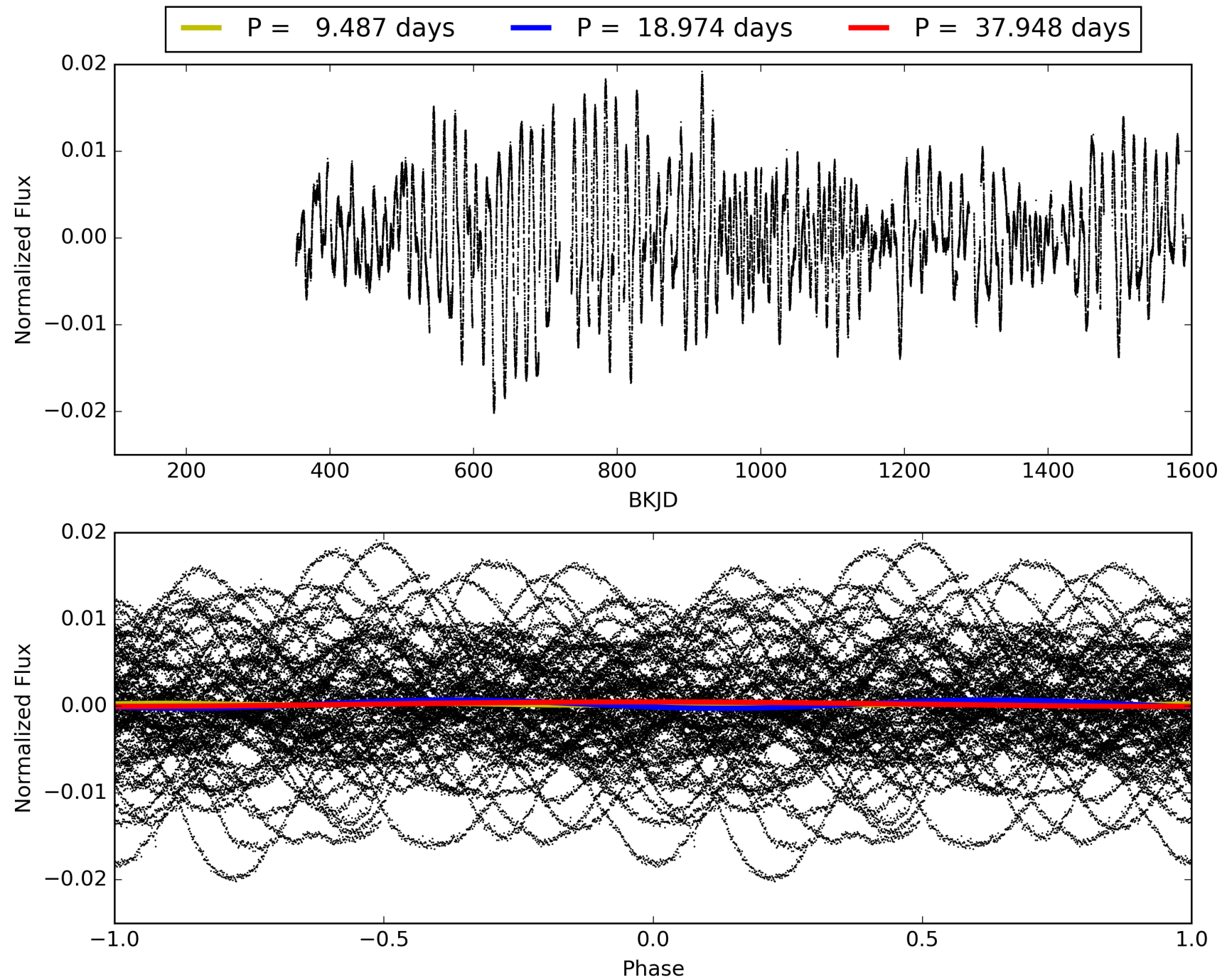
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [78.54σ]
LongPeriod-sig: 100.0% [115.05σ]
ModelChiSquare2-sig: 1.7%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [12/12]
GhostDiagnostic-chr: 0.03694
Centroid-sig: 11.7%
Centroid-so: 3.215 arcsec [44.45σ]
OotOffset-rm: 2.968 arcsec [1.40σ]
KicOffset-rm: 1.104 arcsec [0.94σ]
OotOffset-st: 0/1/1/1 [3]
KicOffset-st: 0/1/1/1 [3]
DiffImageQuality-fgm: 0.00 [0/3]
DiffImageOverlap-fno: 0.00 [0/14]

TCE 007116043-07, PDC Light Curves

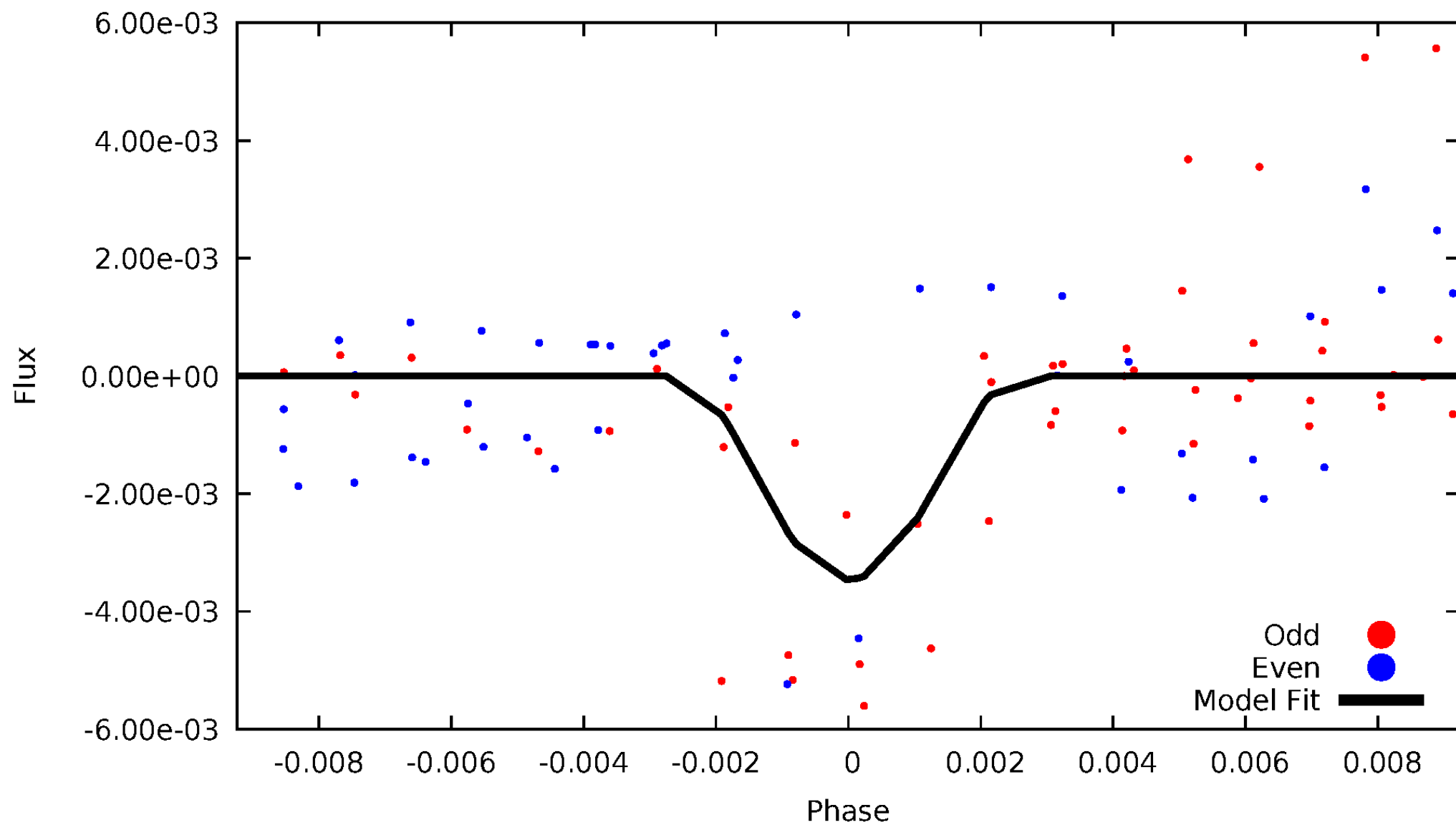


TCE 007116043-07



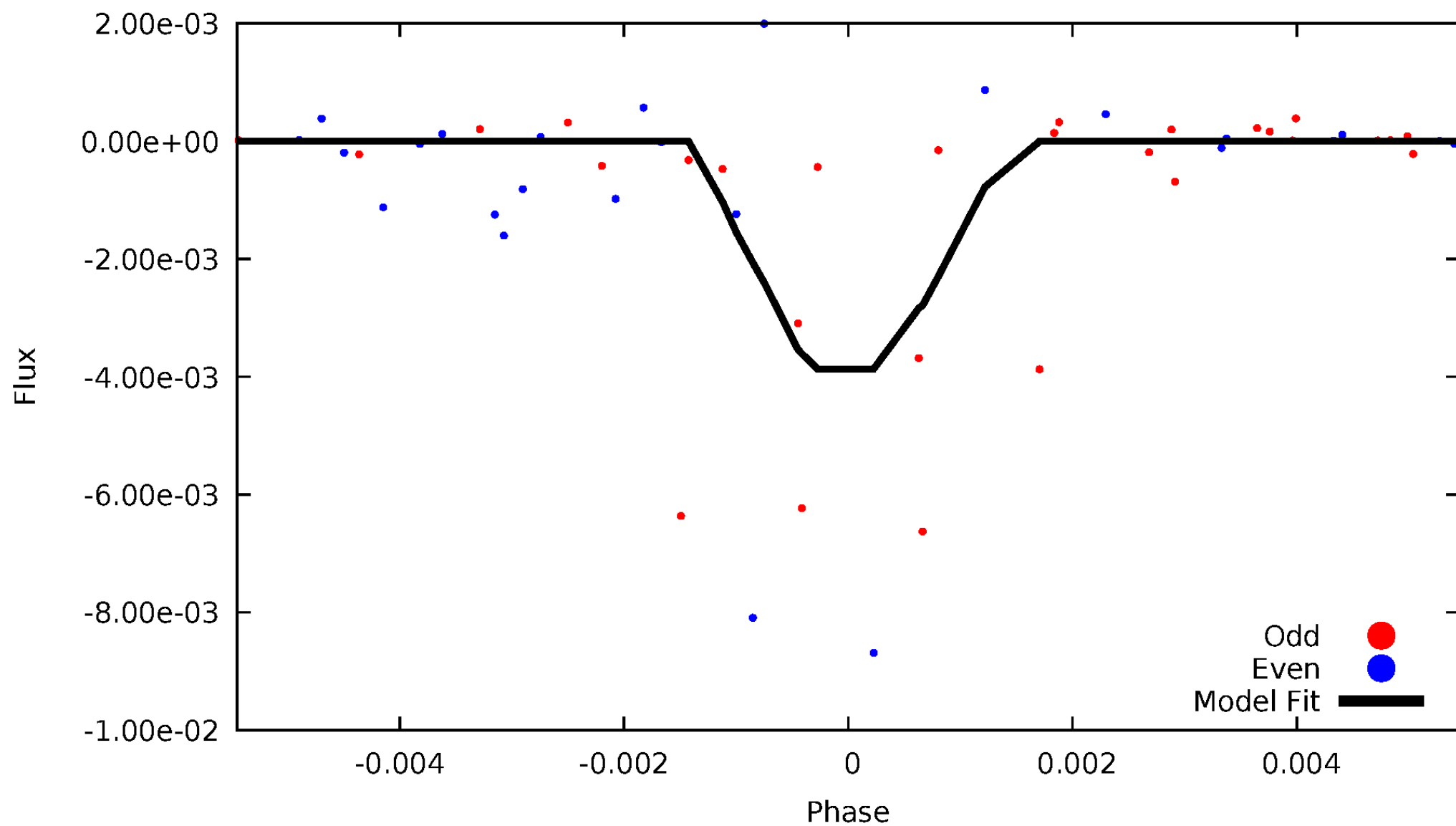
DV Odd/Even

TCE 007116043-07



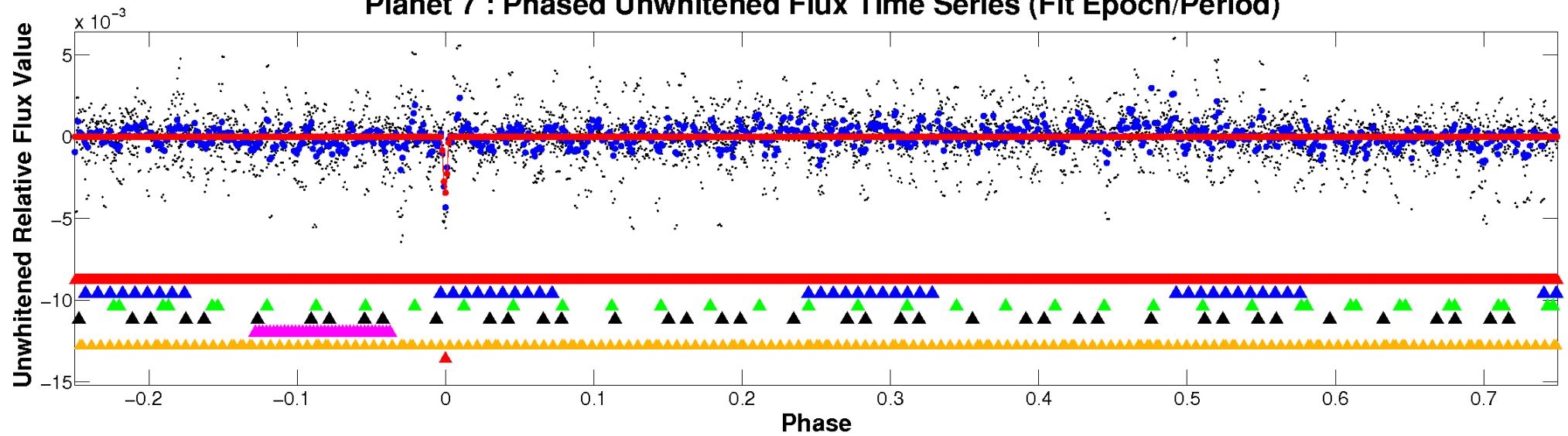
ALT Odd/Even

TCE 007116043-07

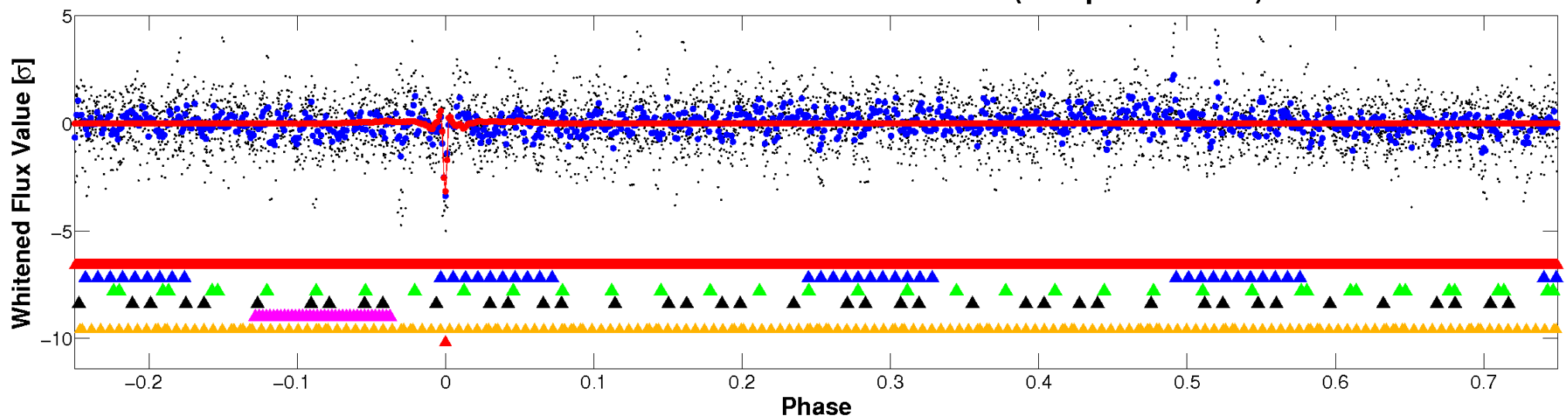


Non-Whitened Vs. Whitened Light Curve

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

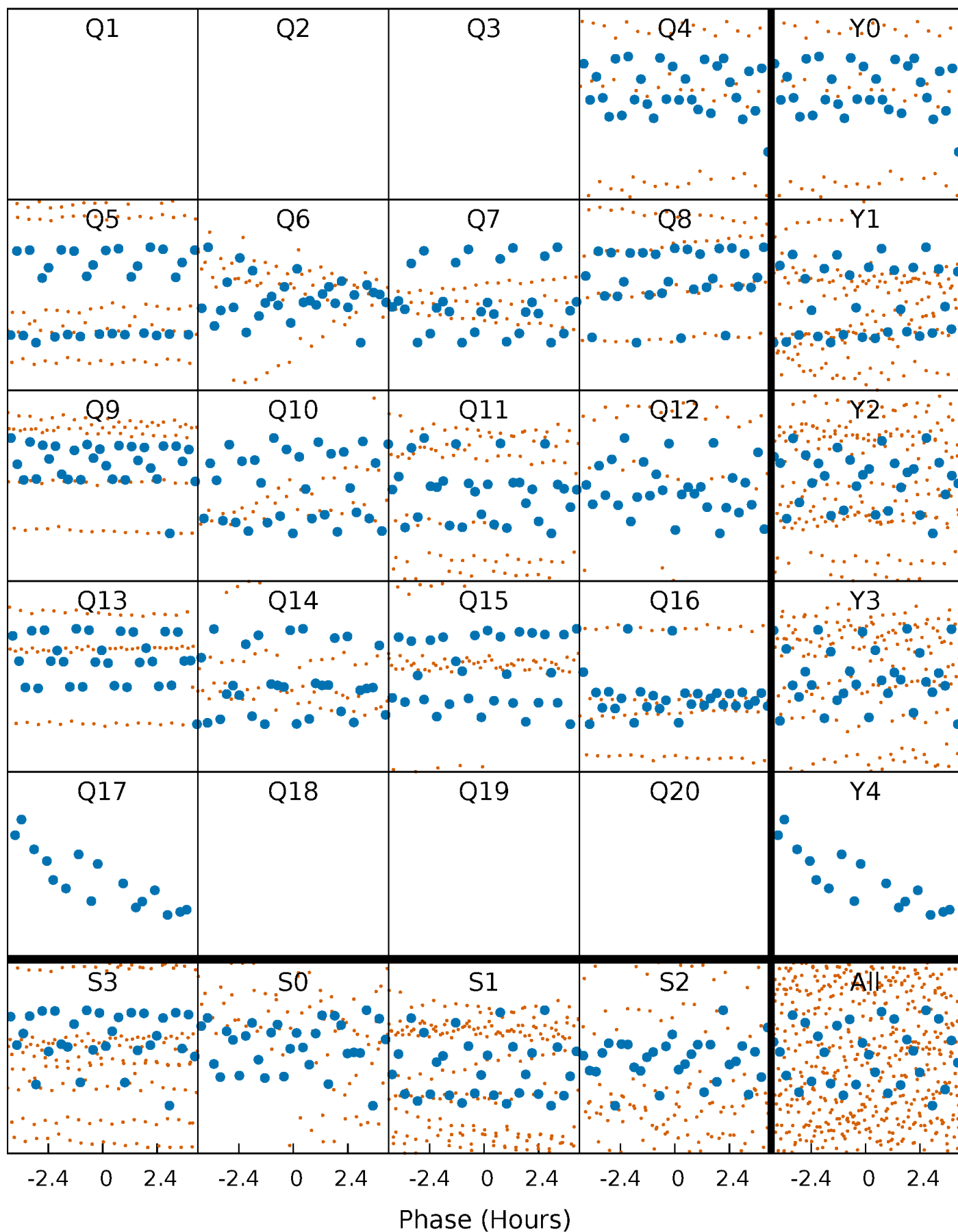


Planet 7 : Phased Whitened Flux Time Series (Fit Epoch/Period)



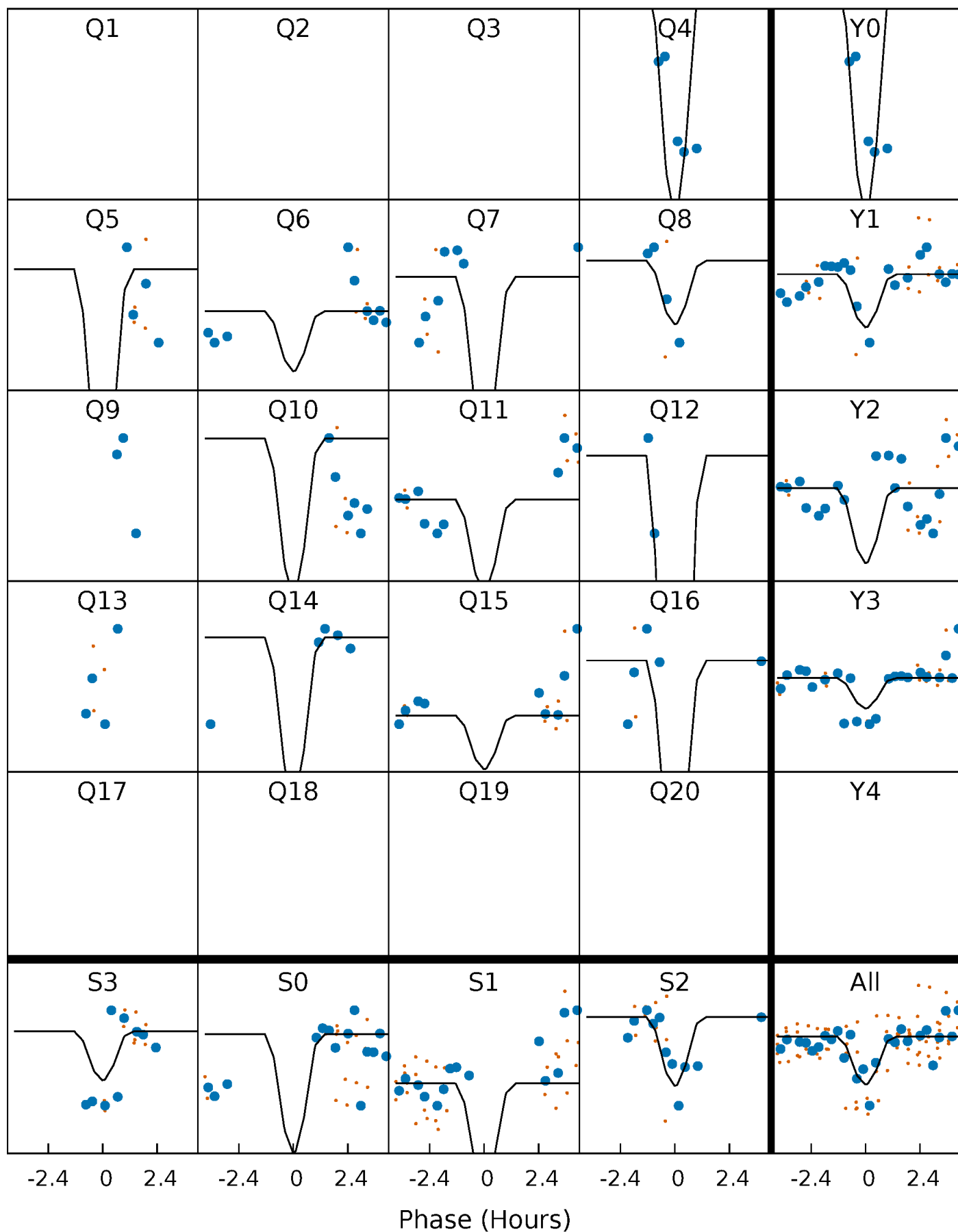
PDC Quarter-Phased Transit Curves

TCE 007116043-07 P= 18.974014 Days $T_0=149.582936$ (BKJD)



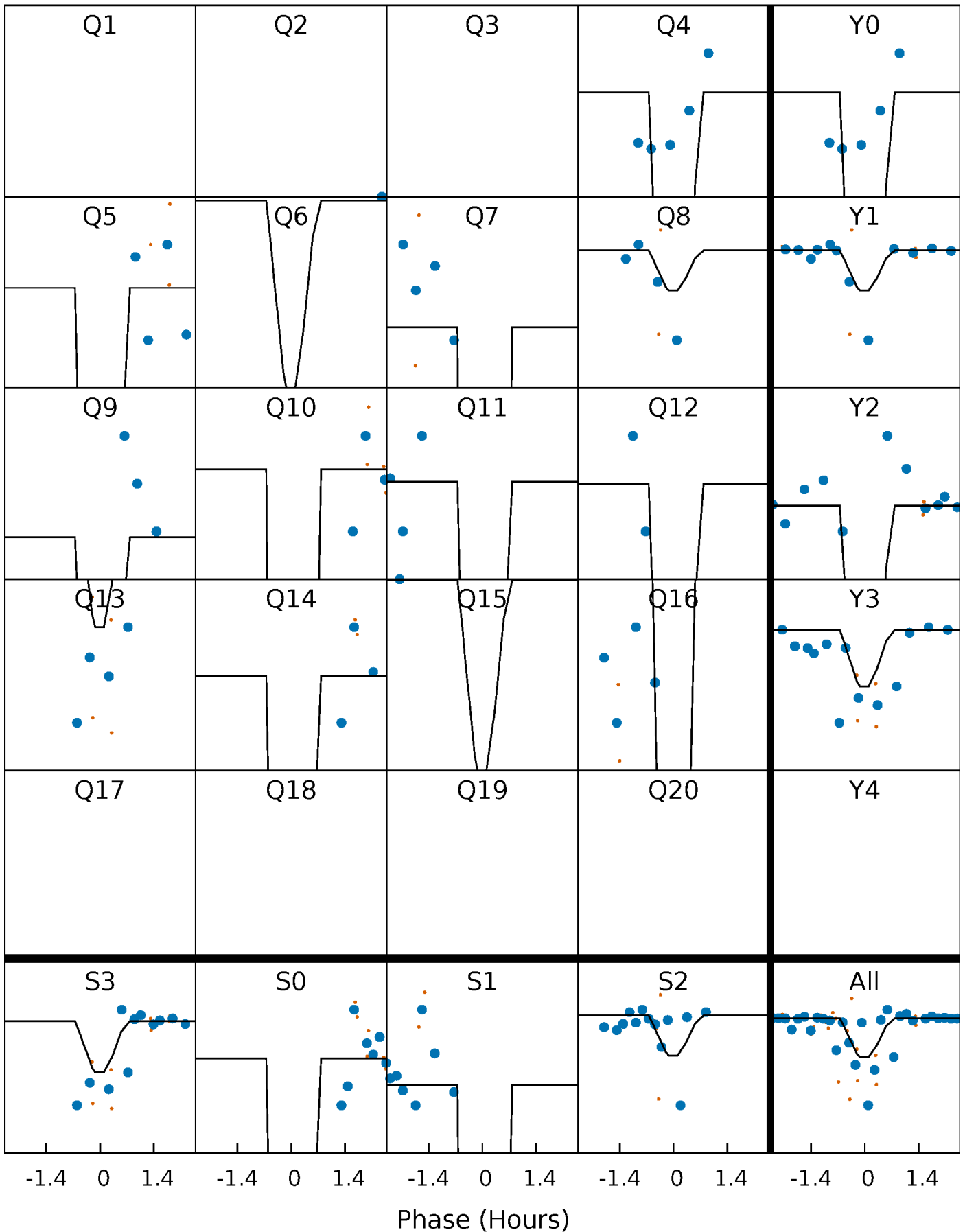
DV Quarter-Phased Transit Curves

TCE 007116043-07 P= 18.974014 Days $T_0=149.582936$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

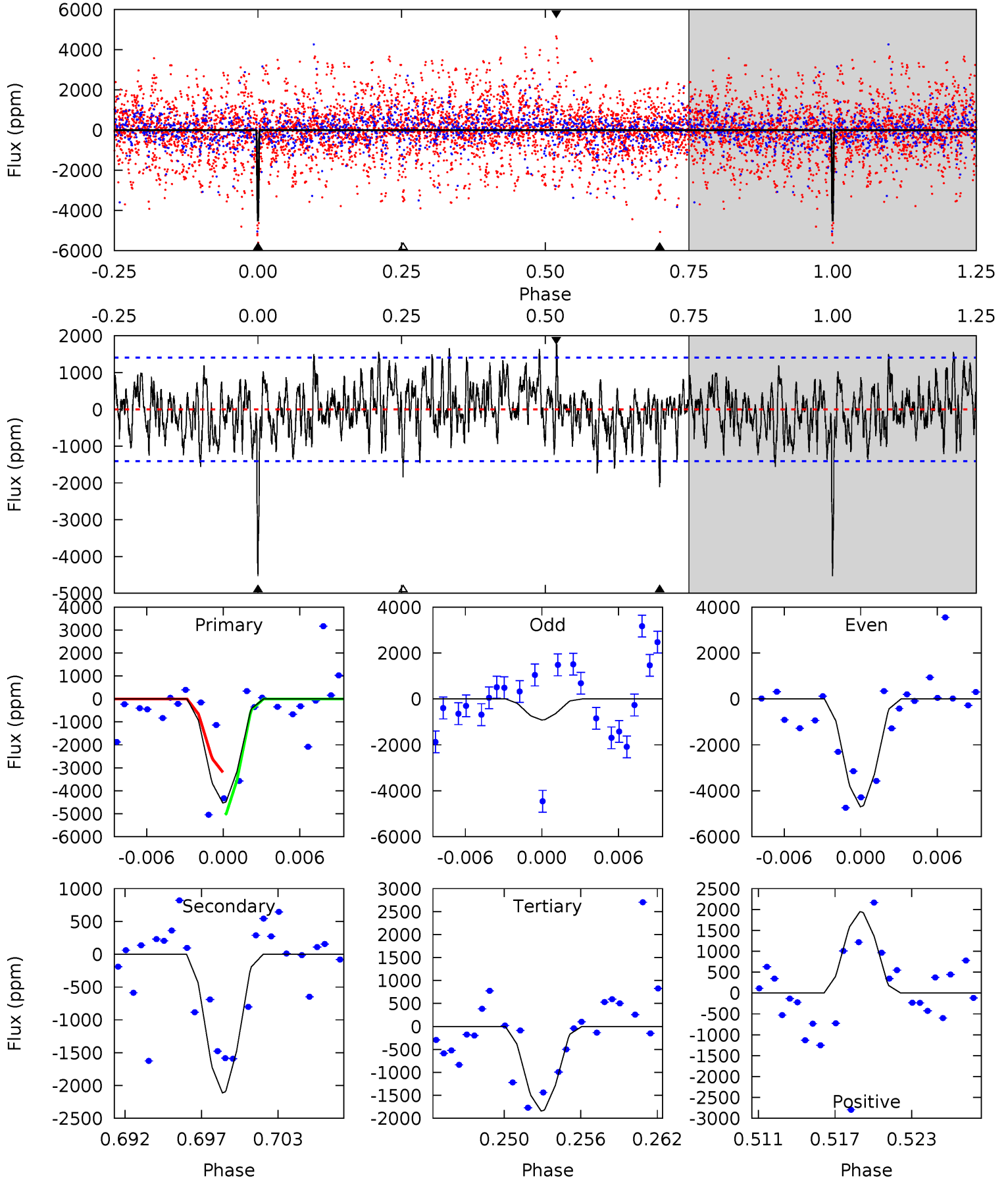
TCE 007116043-07 P= 18.973697 Days $T_0=149.592384$ (BKJD)



DV Model-Shift Uniqueness Test

007116043-07, P = 18.974014 Days, E = 149.582936 Days

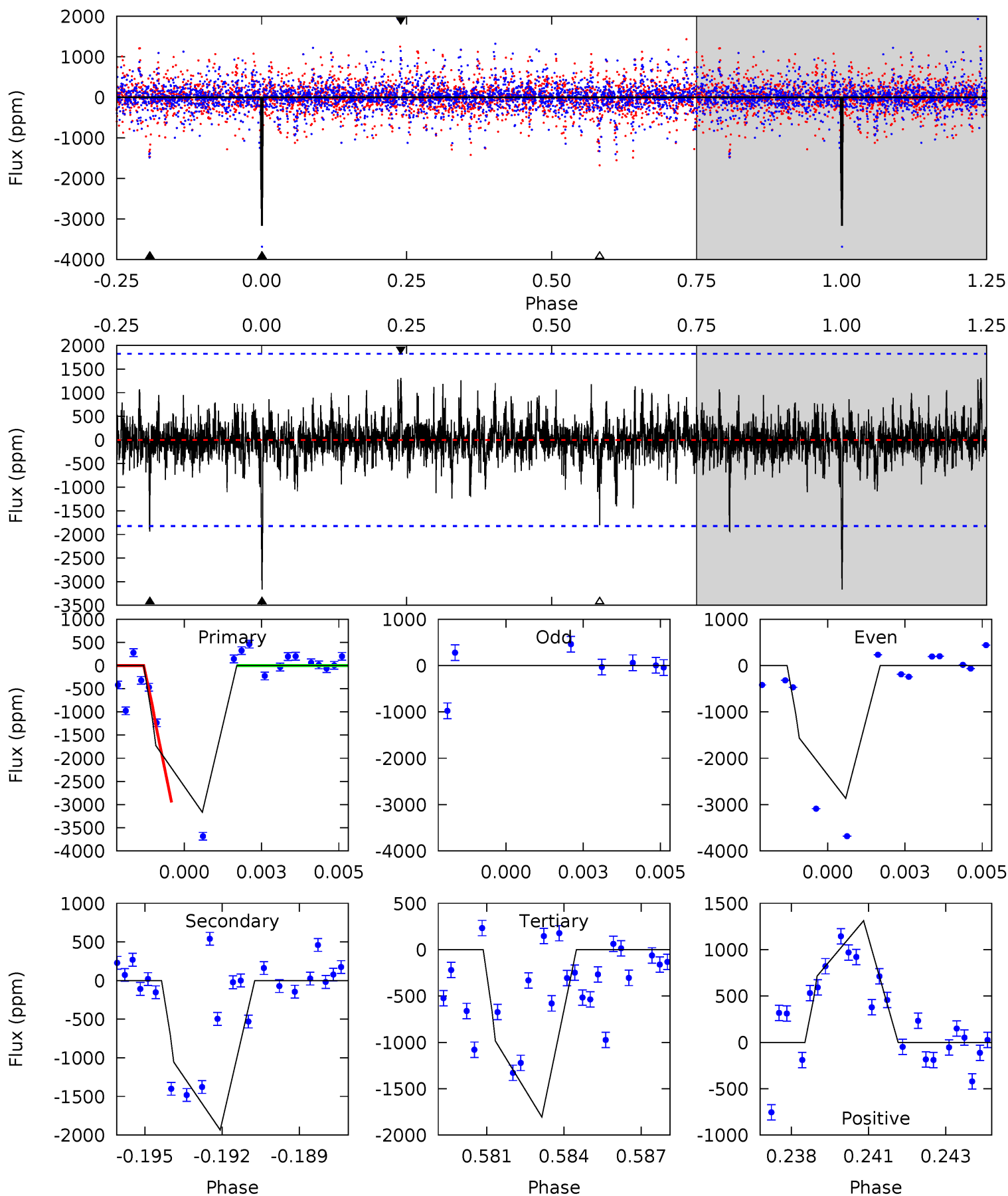
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.5	7.70	6.71	7.10	5.13	2.76	2.06	9.80	9.41	0.99	0.60	6.82	0.96	0.30	3.50



Alt Model-Shift Uniqueness Test

007116043-07, $P = 18.973697$ Days, $E = 149.592384$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.15	5.59	5.22	3.79	5.27	3.00	0.89	3.93	5.36	0.37	1.80	0	0.95	0.29	0



Stellar Parameters For KIC 007116043

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5576^{+183}_{-183}	$4.297^{+0.195}_{-0.195}$	$0.100^{+0.250}_{-0.300}$	$1.132^{+0.314}_{-0.257}$	$0.928^{+0.115}_{-0.084}$	$0.900^{+0.941}_{-0.466}$
	+3%/-3%	+5%/-5%	+250%/-300%	+28%/-23%	+12%/-9%	+105%/-52%
Source	KIC0	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 007116043-07 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-2114 ± 274	$38.17^{+41.02}_{-26.53}$	996^{+81}_{-72}	2859^{+1273}_{-493}	15^{+149}_{-12}
Alt.	-1934 ± 346	$36.18^{+37.14}_{-24.54}$	999^{+76}_{-77}	2851^{+1278}_{-471}	15^{+136}_{-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 $T_{\text{obs}} \gg T_{\text{max}}$ AND $A_{\text{obs}} \gg 1.0$

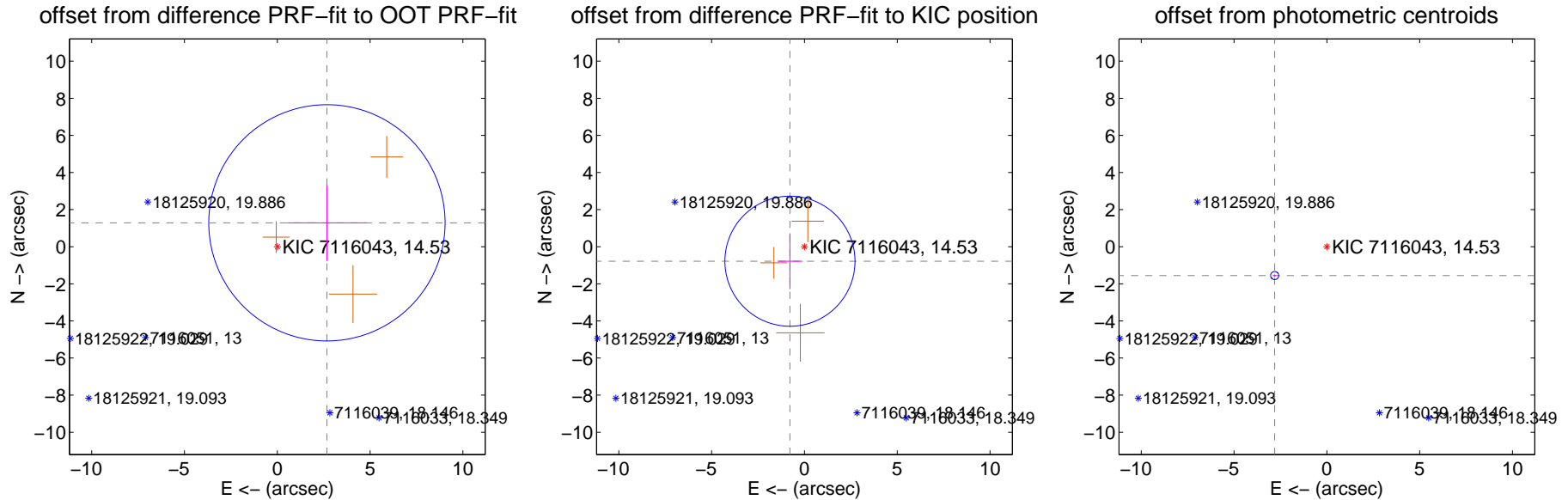
DV Centroid Data

Supplemental centroid analysis for 007116043-07. Kepler magnitude: 14.53. Transit SNR 8.82

There are 0 quarters with good PRF difference image offsets

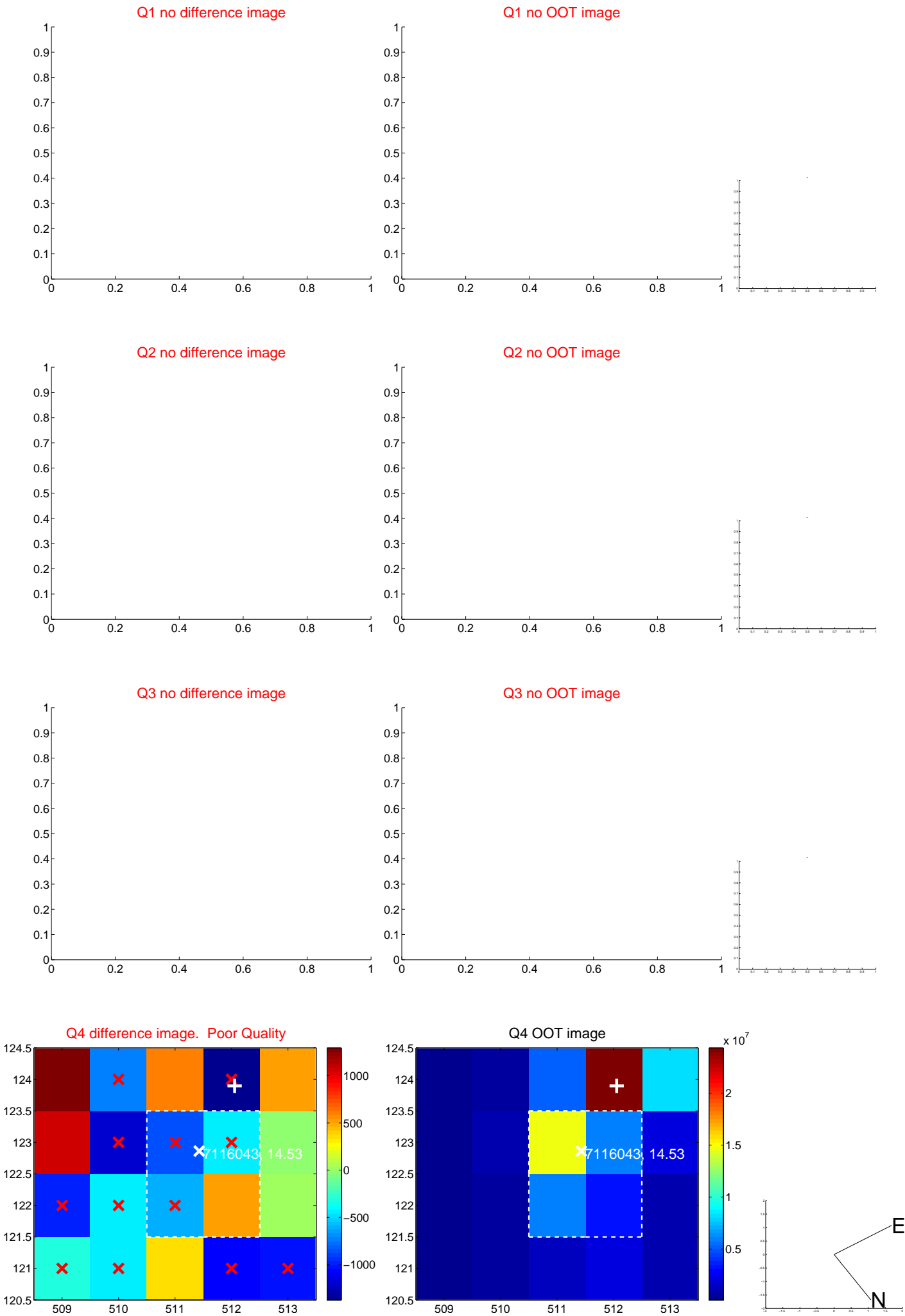
The OOT PRF centroid is offset from the target star catalog position by about 2.11 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.968 ± 2.122	1.40	-2.674 ± 2.140	1.288 ± 2.046
PRF-fit source offset from KIC position	1.104 ± 1.169	0.94	0.780 ± 0.678	-0.781 ± 1.506
photometric centroid source offset	3.22 ± 0.07	44.45	2.81 ± 0.08	-1.55 ± 0.06

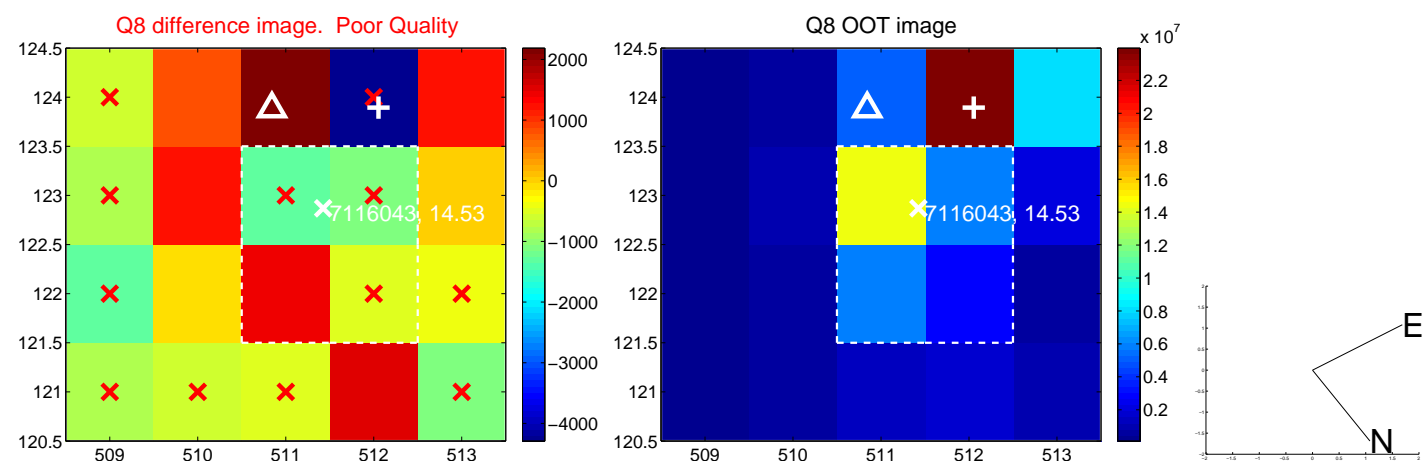
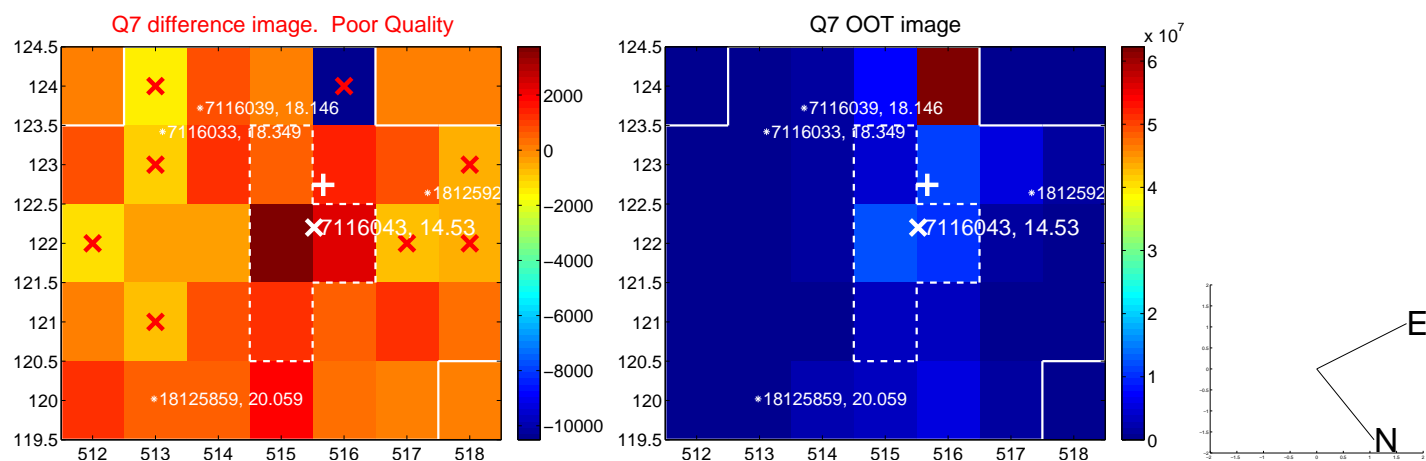
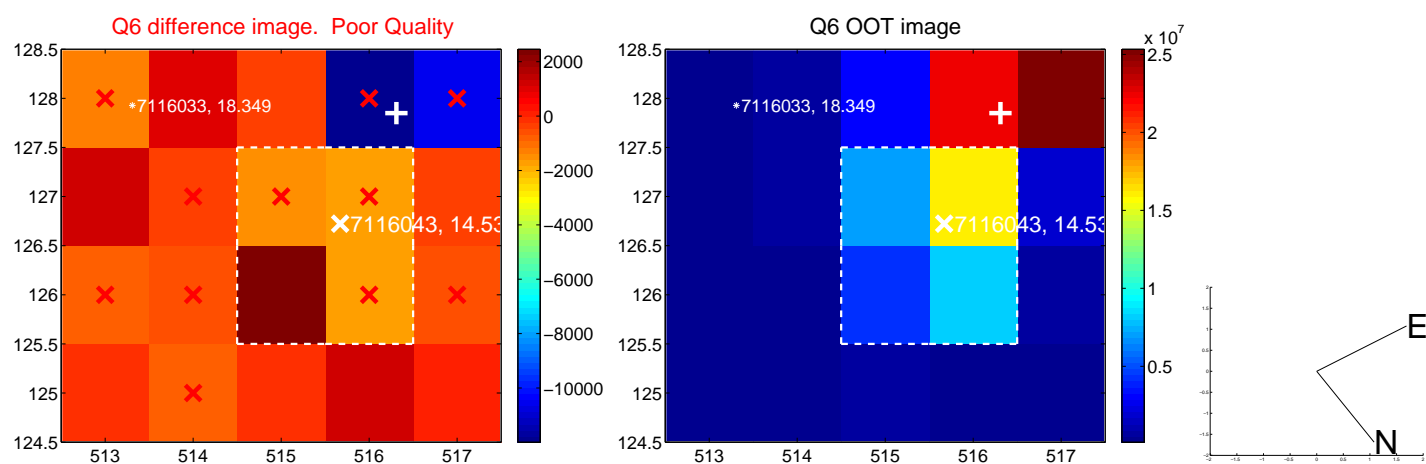
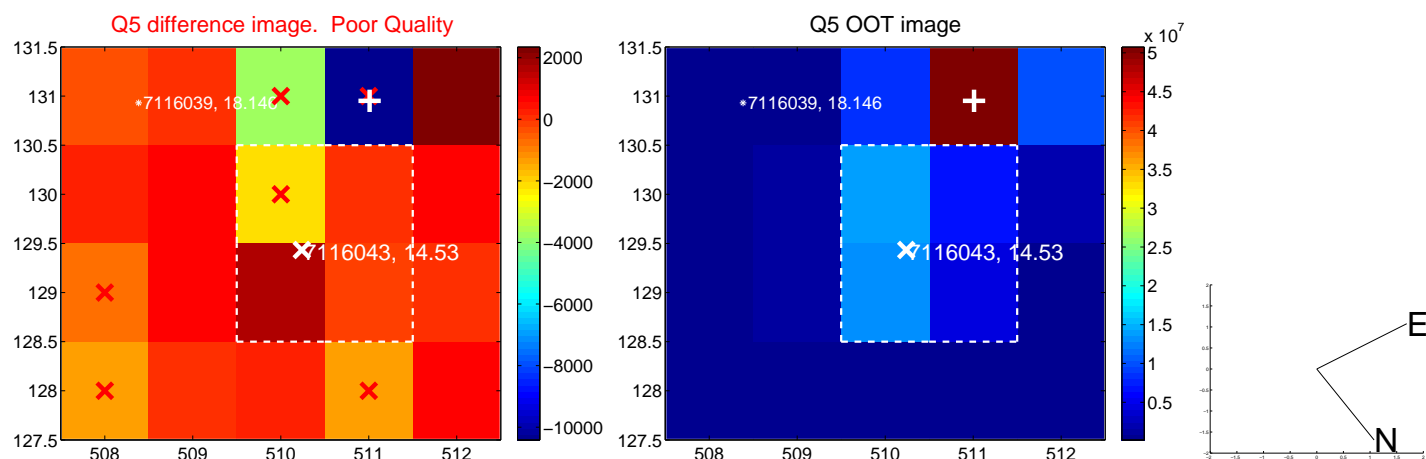


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

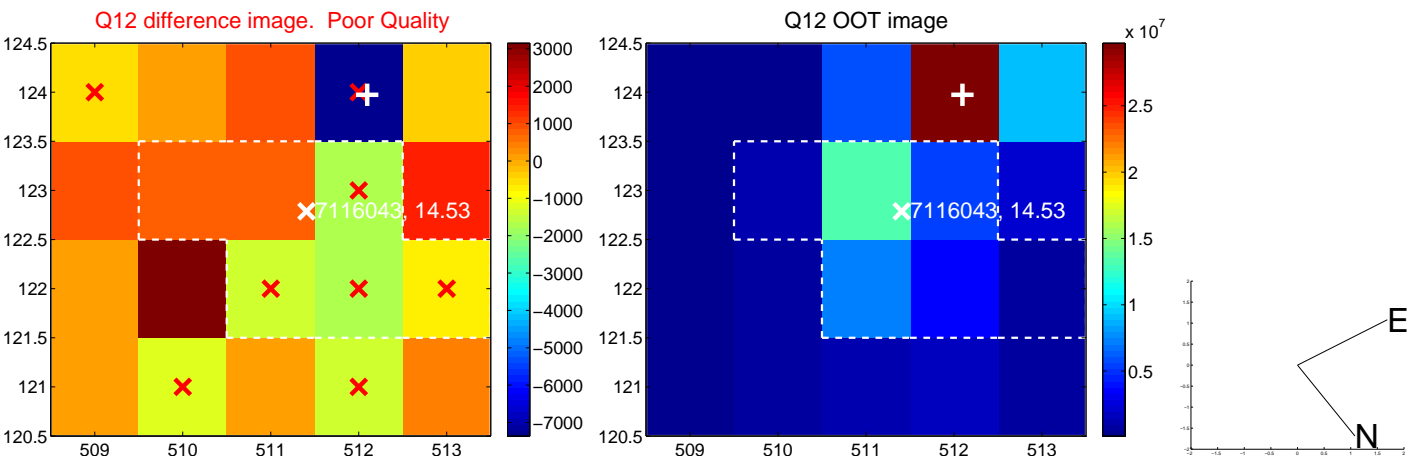
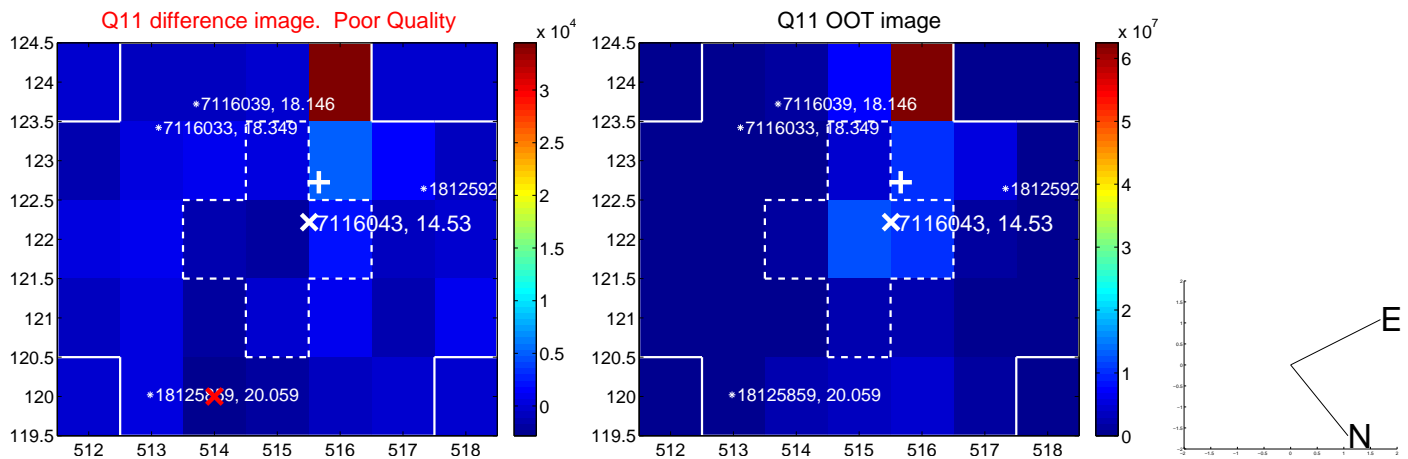
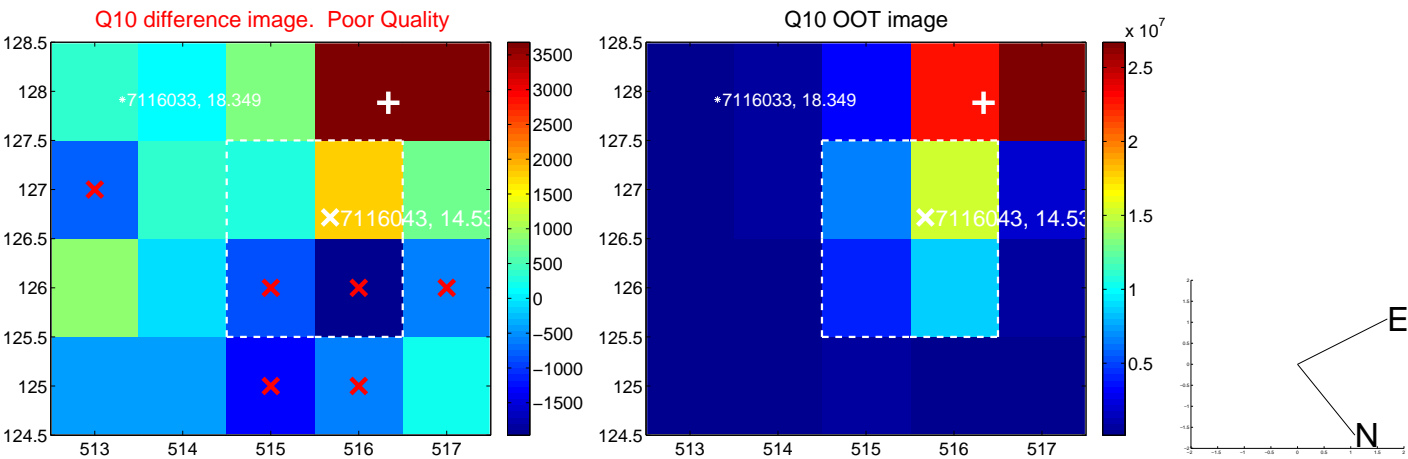
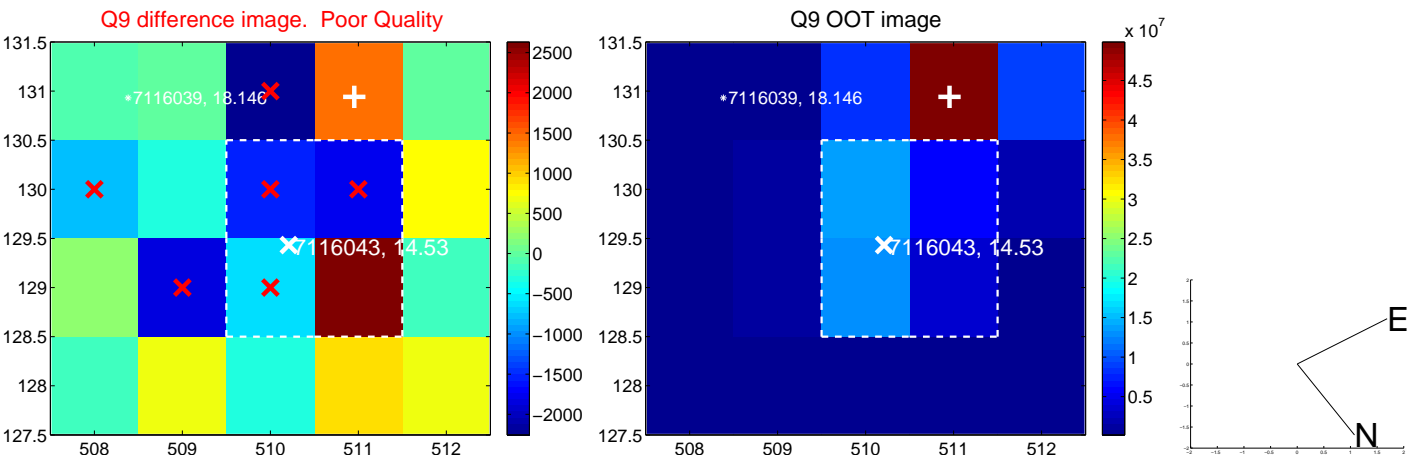
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



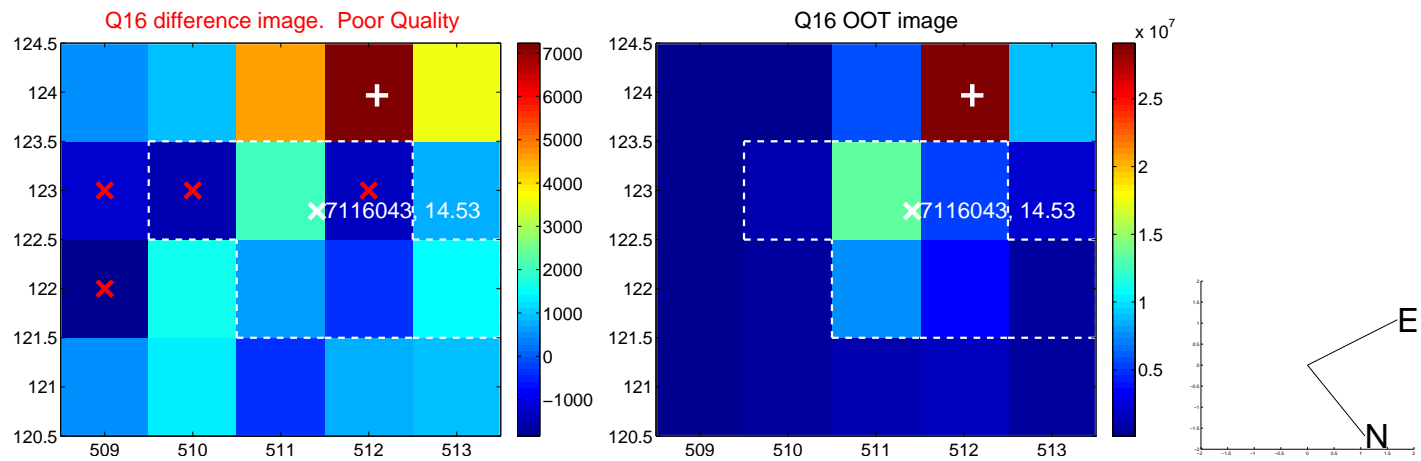
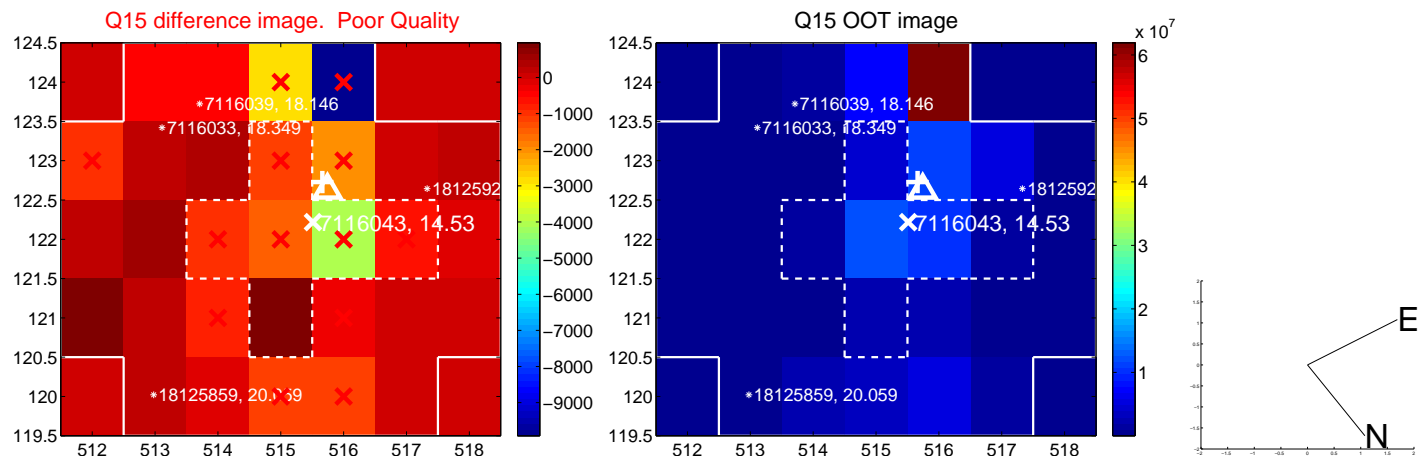
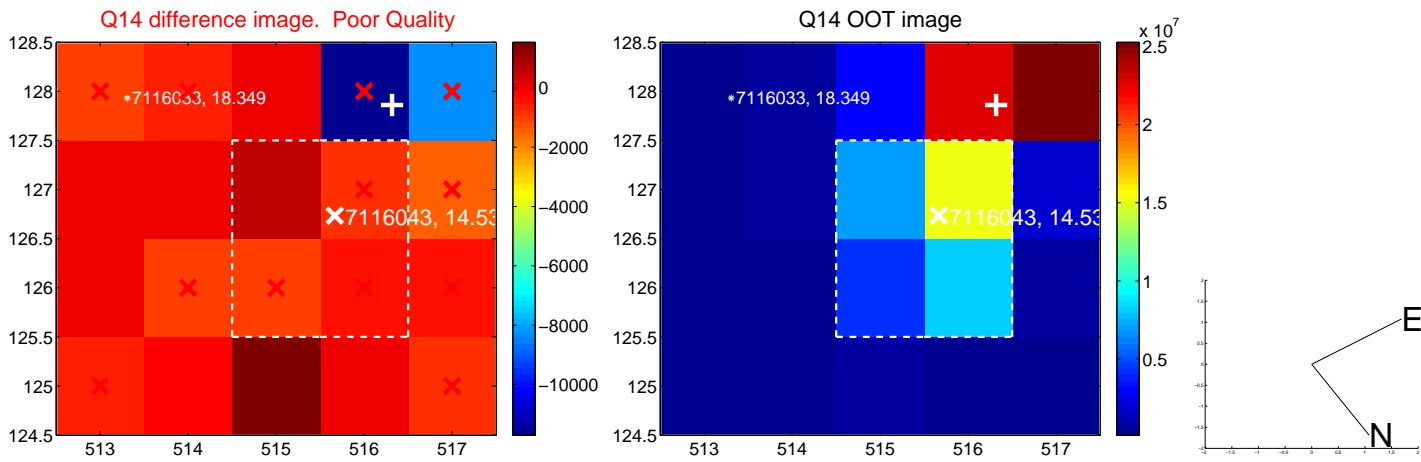
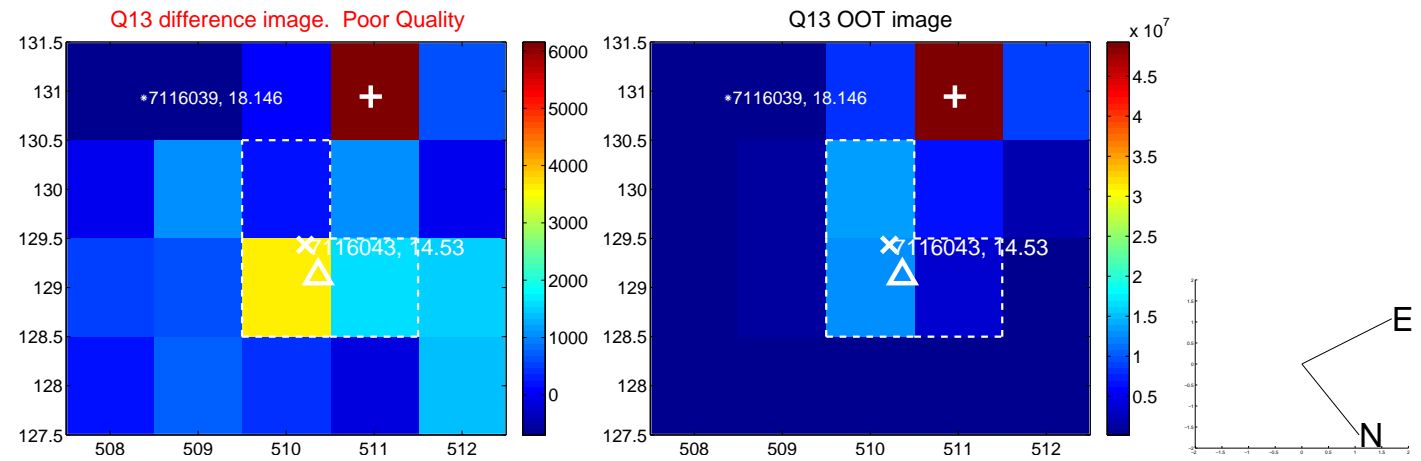
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



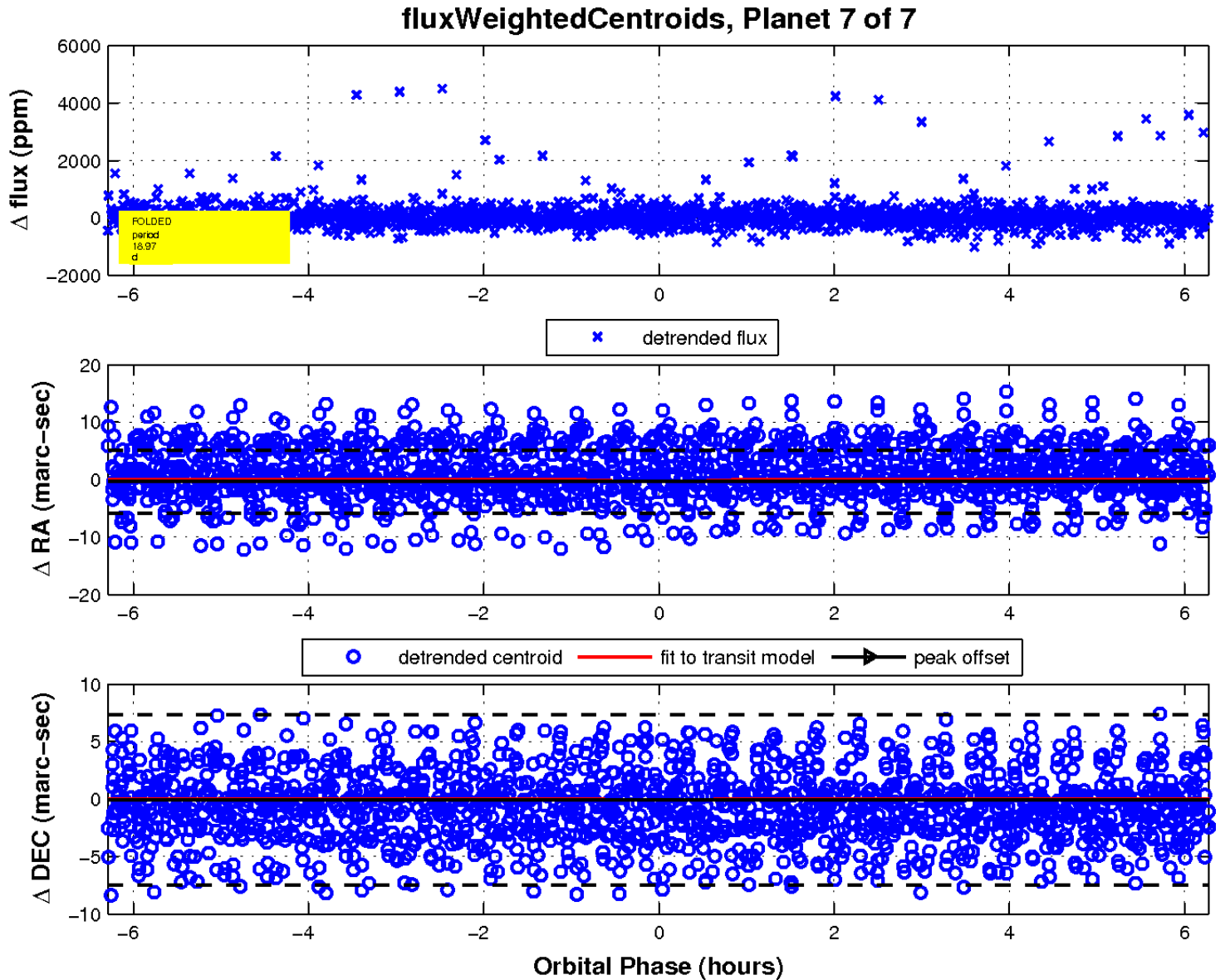
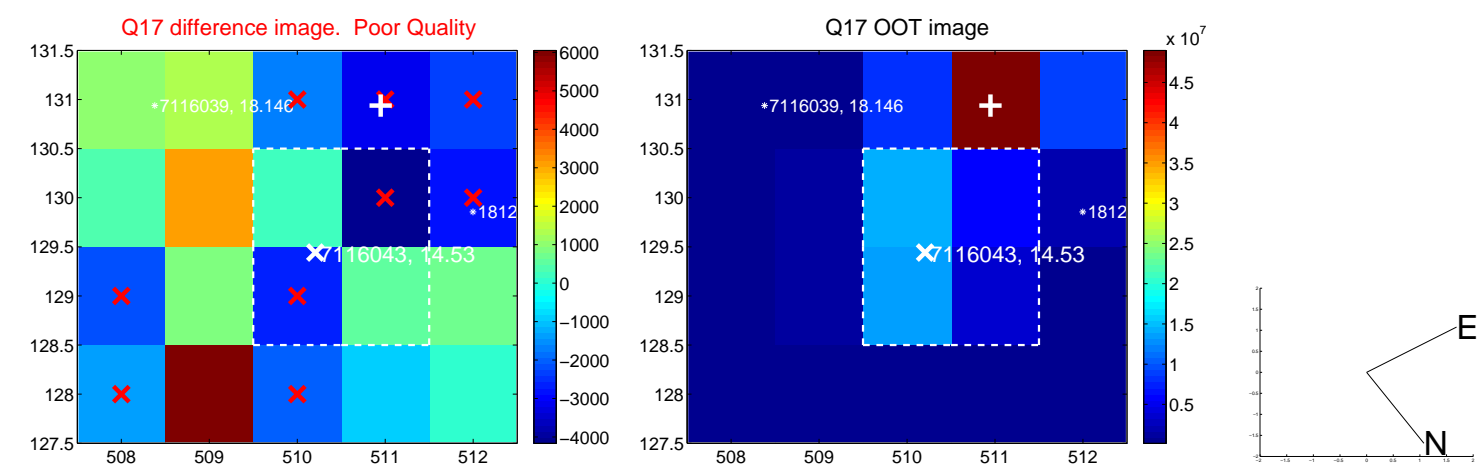
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

