

KIC 010341878

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})
010341878-01	OBS	6220.01	0.933675	131.568834	14.3	4.692	14.8	9.3	2.06	7286	0.85	22940.62
010341878-02	OBS	No	3.500398	132.132756	51.7	5.239	10.1	12.0	2.06	7286	1.76	3938.91
010341878-03	OBS	No	310.989450	278.382853	157.7	6.933	7.4	7.0	2.06	7286	2.93	9.94

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010341878-01	OBS	FP	0.00	0	0	0	1	EPHEM_MATCH
010341878-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—TRANS_GAPPED—SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT
010341878-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS

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

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

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

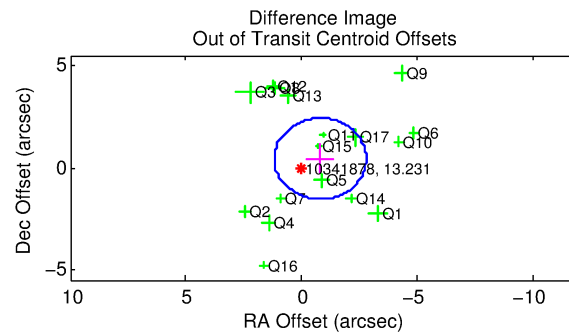
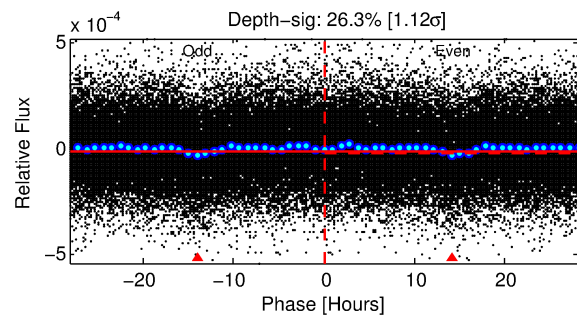
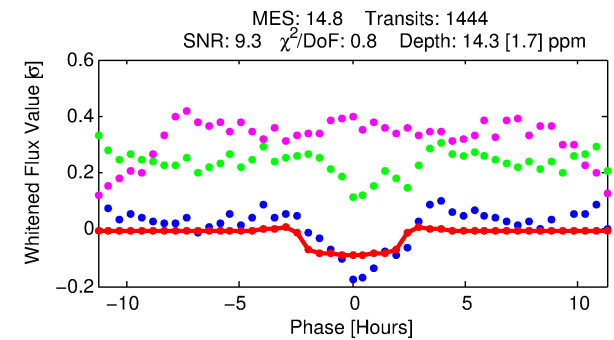
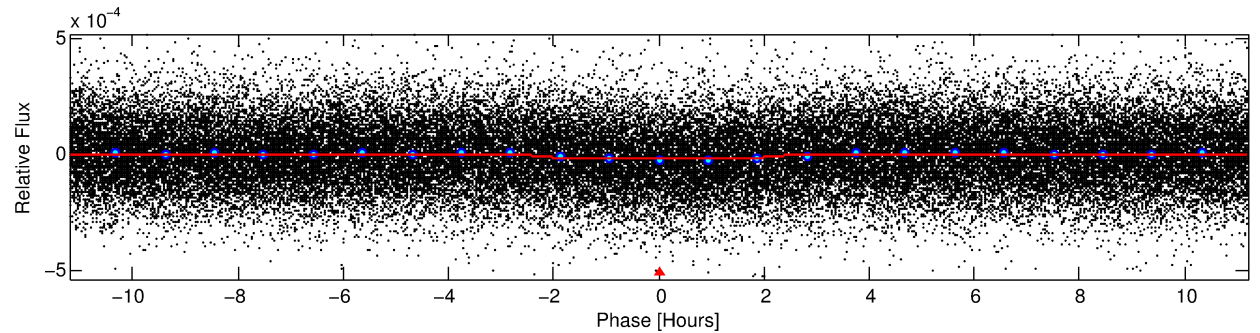
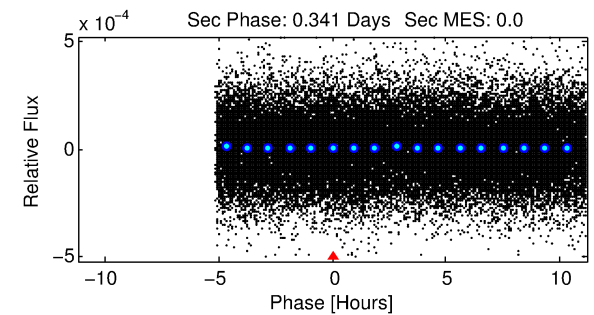
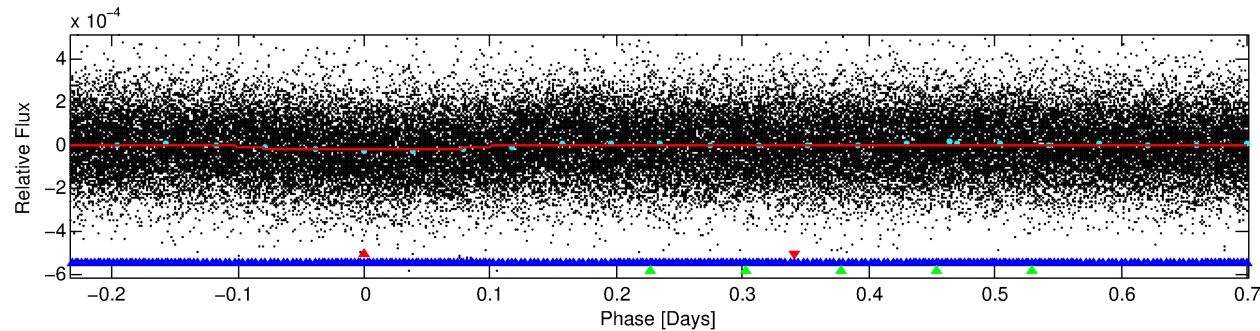
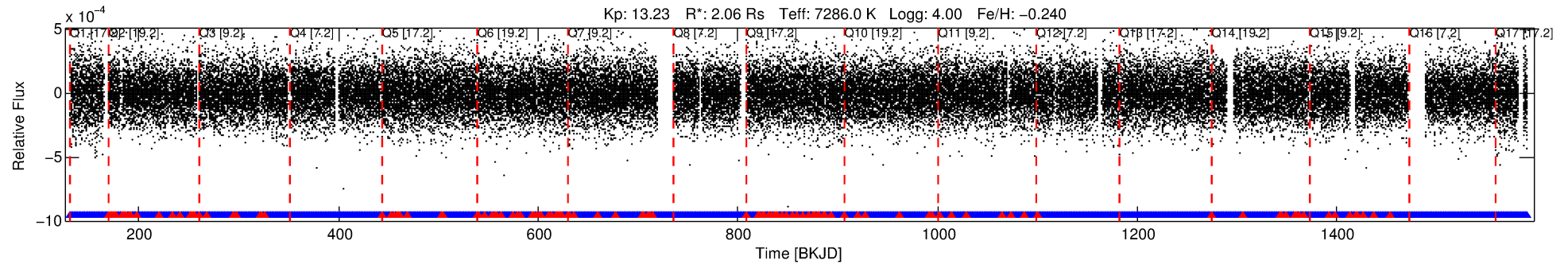
Ephemeris Match Information For 010341878-01

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
010341878-01	10341878	V2083-Cyg-pri	10342012	1:2	184.1	-6	-46	6.90	13.23	14166.00	Direct-PRF	0	0.48	2.95

Notes: $P_1:P_2$ 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. m_2 and m_1 are the magnitudes of the parent and child. D_2/D_1 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: 10341878 Candidate: 1 of 3 Period: 0.934 d
KOI: K06220.01 Corr: 0.836



DV Fit Results:

Period = 0.93368 [0.00001] d
Epoch = 131.5688 [0.0050] BKJD
Rp/R* = 0.0038 [0.0014]
a/R* = 1.29 [1.14]
b = 0.79 [1.09]
Seff = 22940.62 [10806.91]
Teff = 3138 [370] K
Rp = 0.85 [0.42] Re
a = 0.0216 [0.0062] AU
Ag = N/A
Teffp = N/A

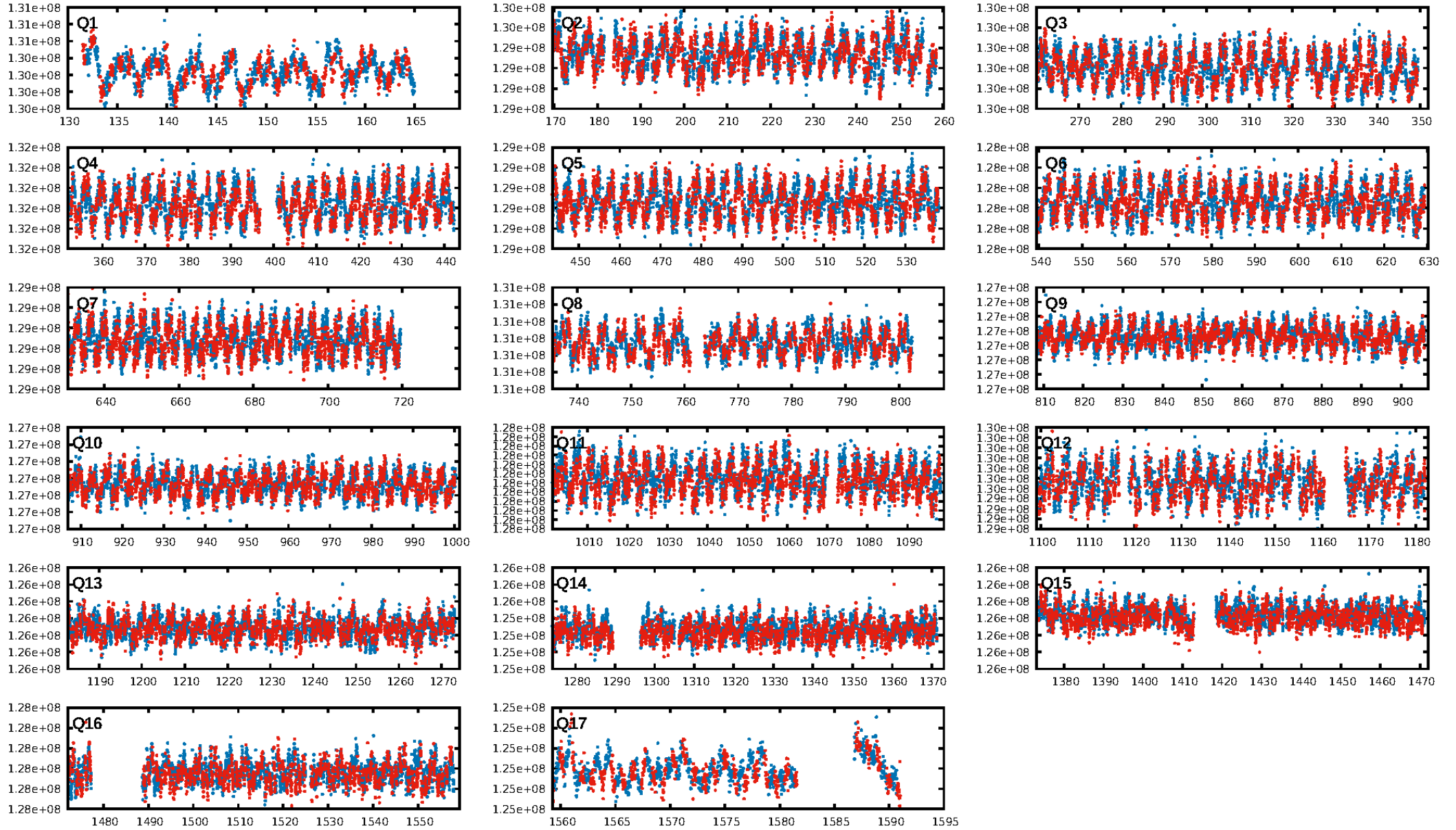
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [8.76σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.51e-37
RollingBand-fgt: 0.91 [1252/1378]
GhostDiagnostic-chr: -0.375
Centroid-sig: 0.0%
Centroid-so: 4.506 arcsec [4.09σ]
OotOffset-rm: 0.918 arcsec [1.39σ]
KicOffset-rm: 0.924 arcsec [1.50σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.35 [6/17]
DiffImageOverlap-fno: 1.00 [17/17]

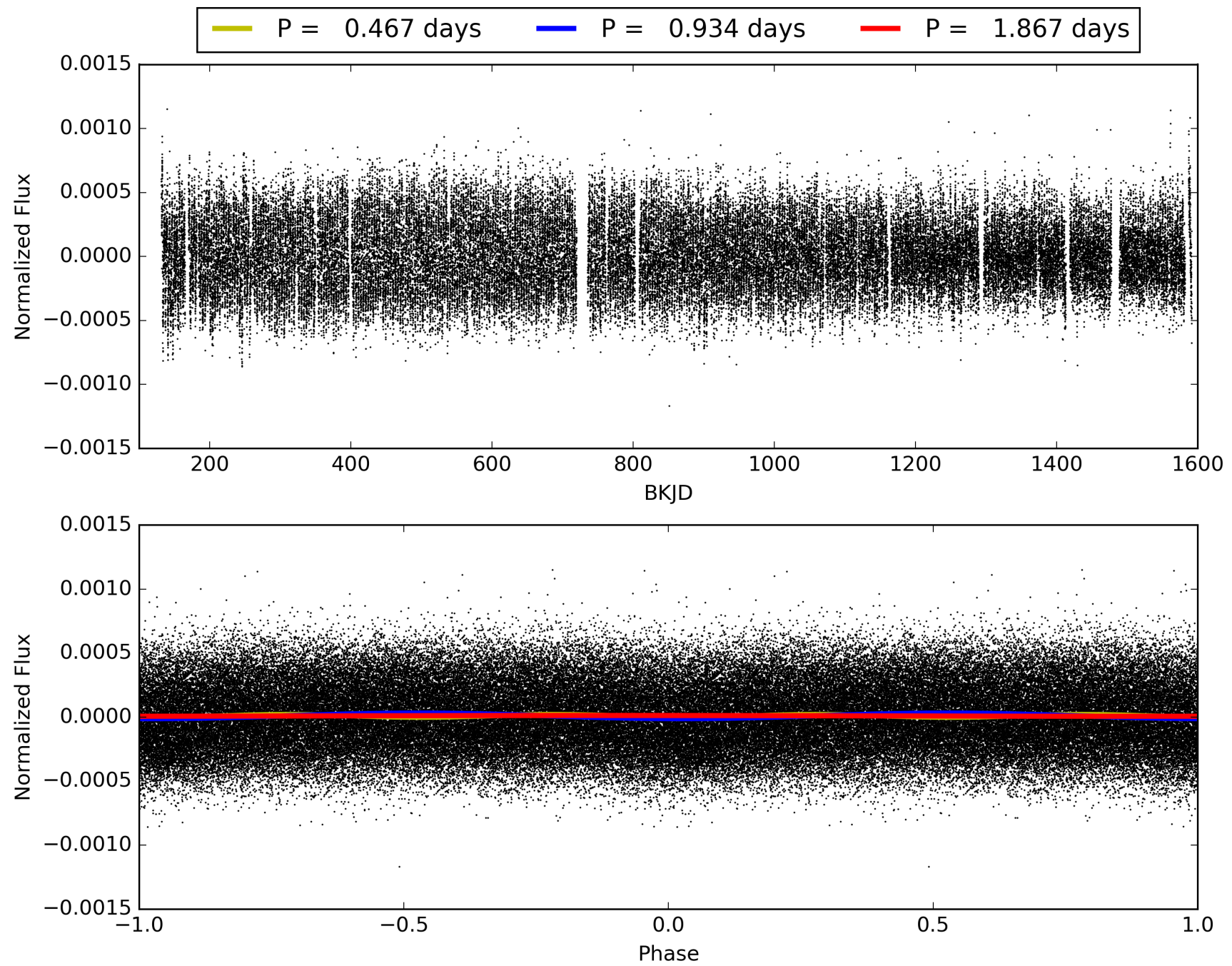
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 010341878-01, PDC Light Curves

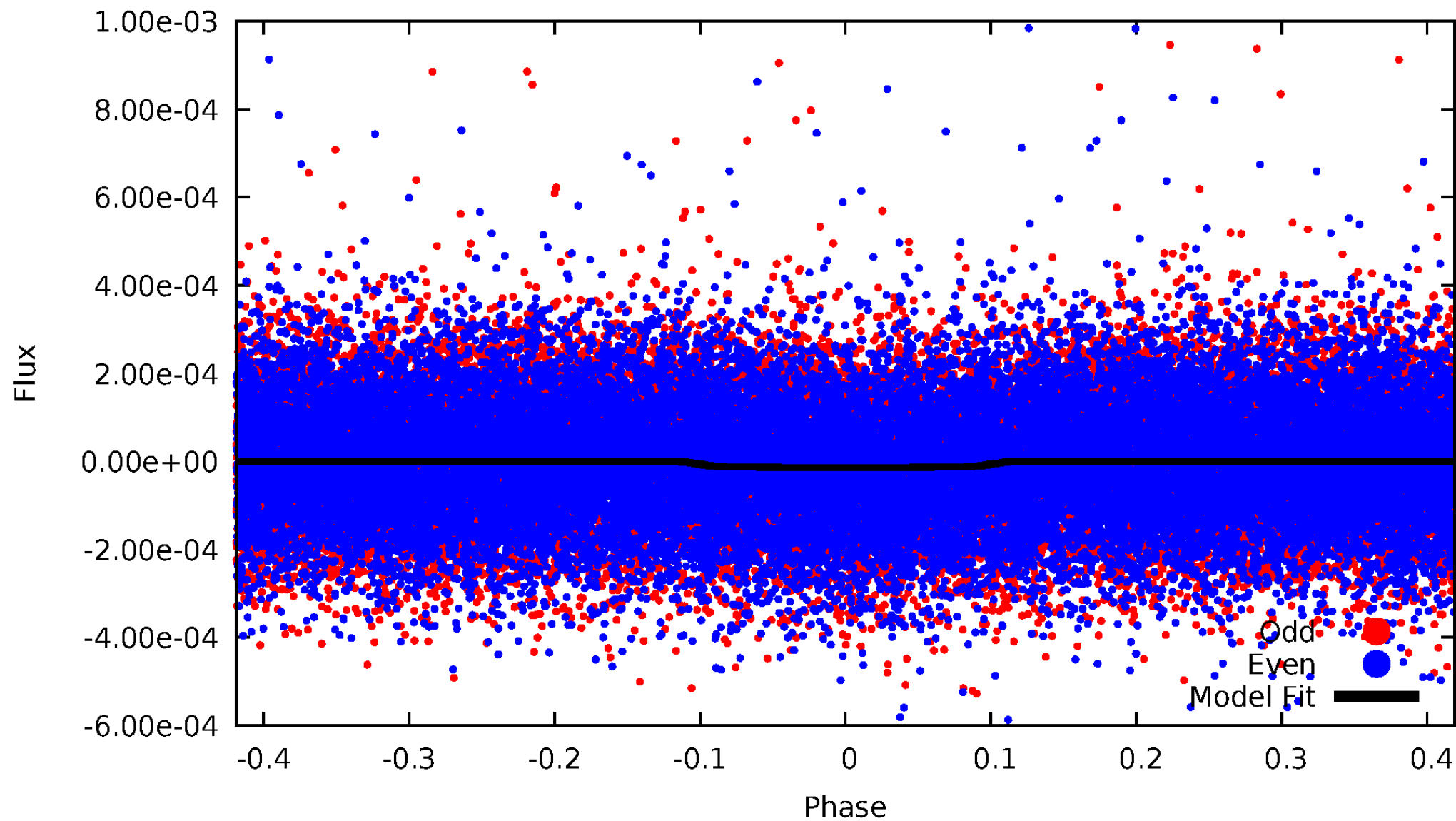


TCE 010341878-01



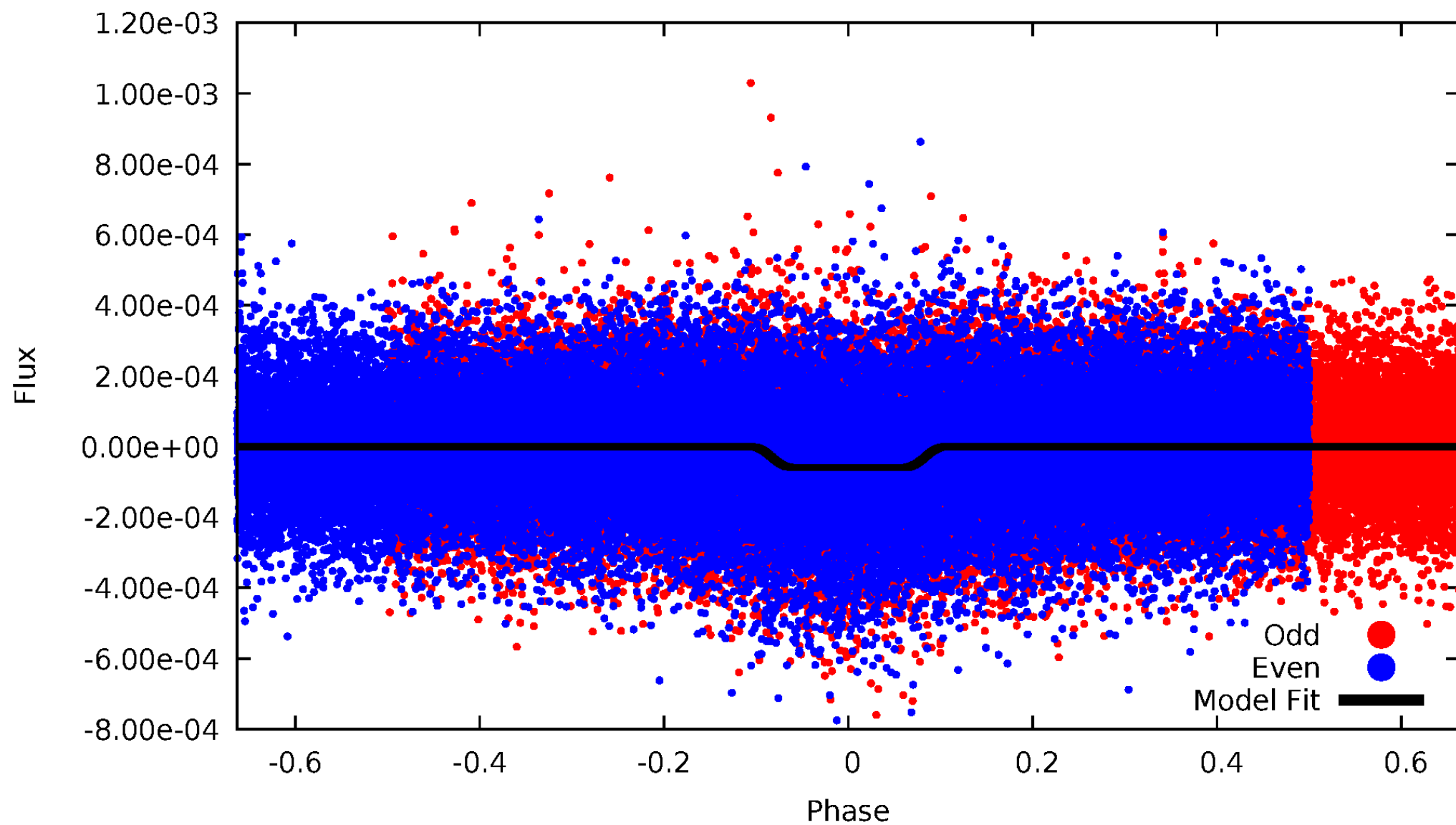
DV Odd/Even

TCE 010341878-01



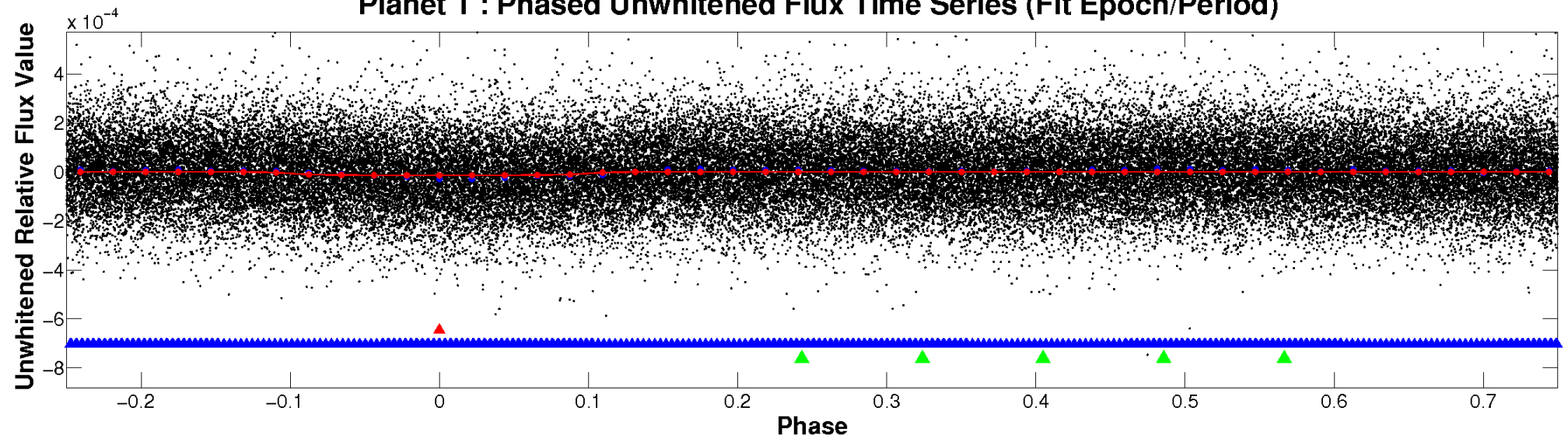
ALT Odd/Even

TCE 010341878-01

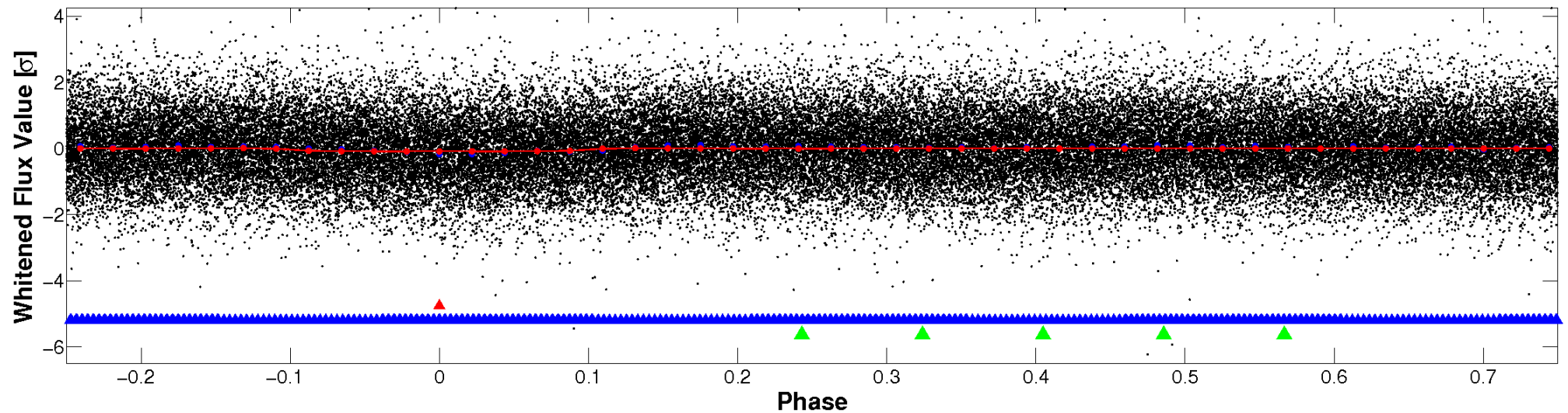


Non-Whitened Vs. Whitened Light Curve

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

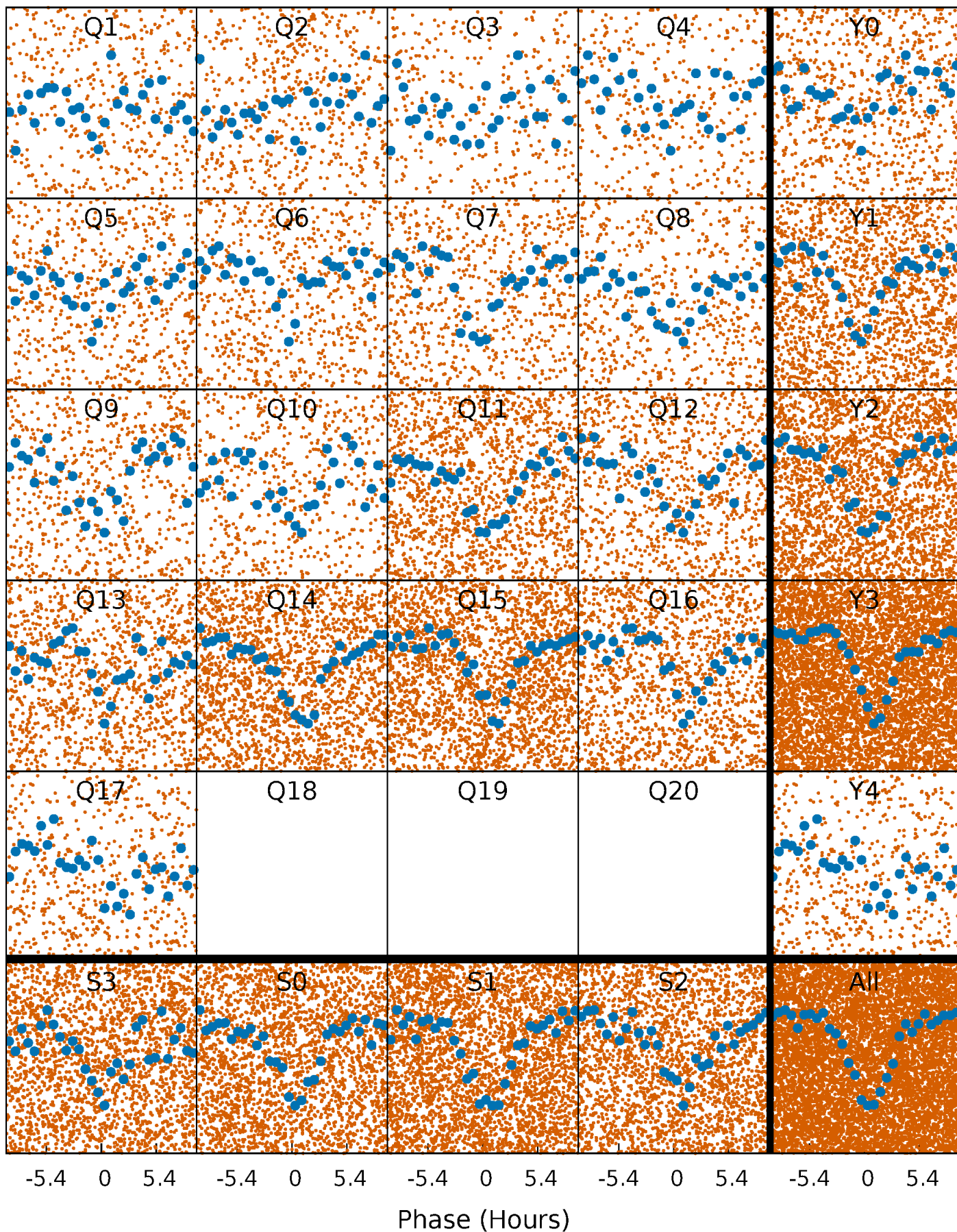


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



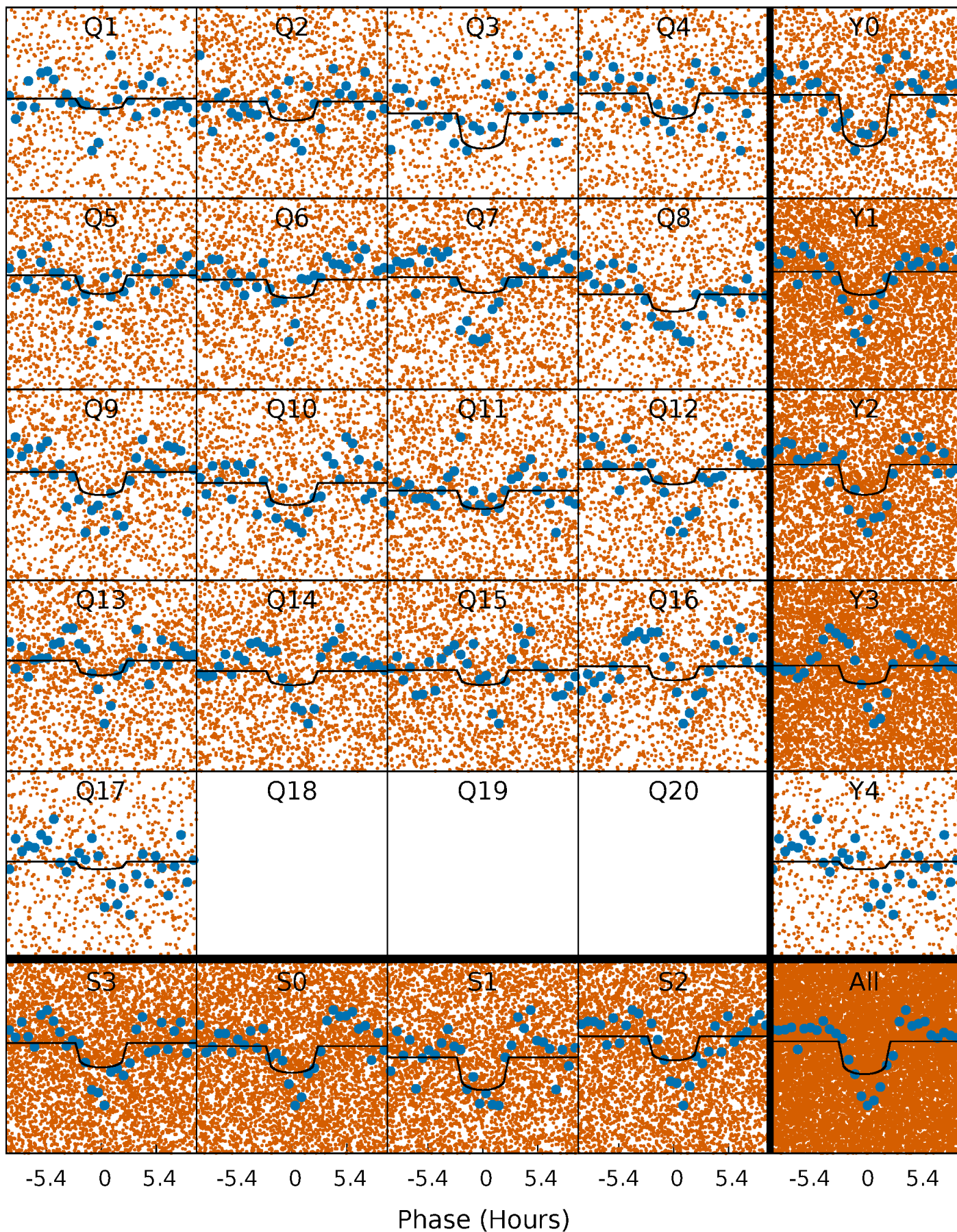
PDC Quarter-Phased Transit Curves

TCE 010341878-01 P= 0.933675 Days $T_0=131.568834$ (BKJD)



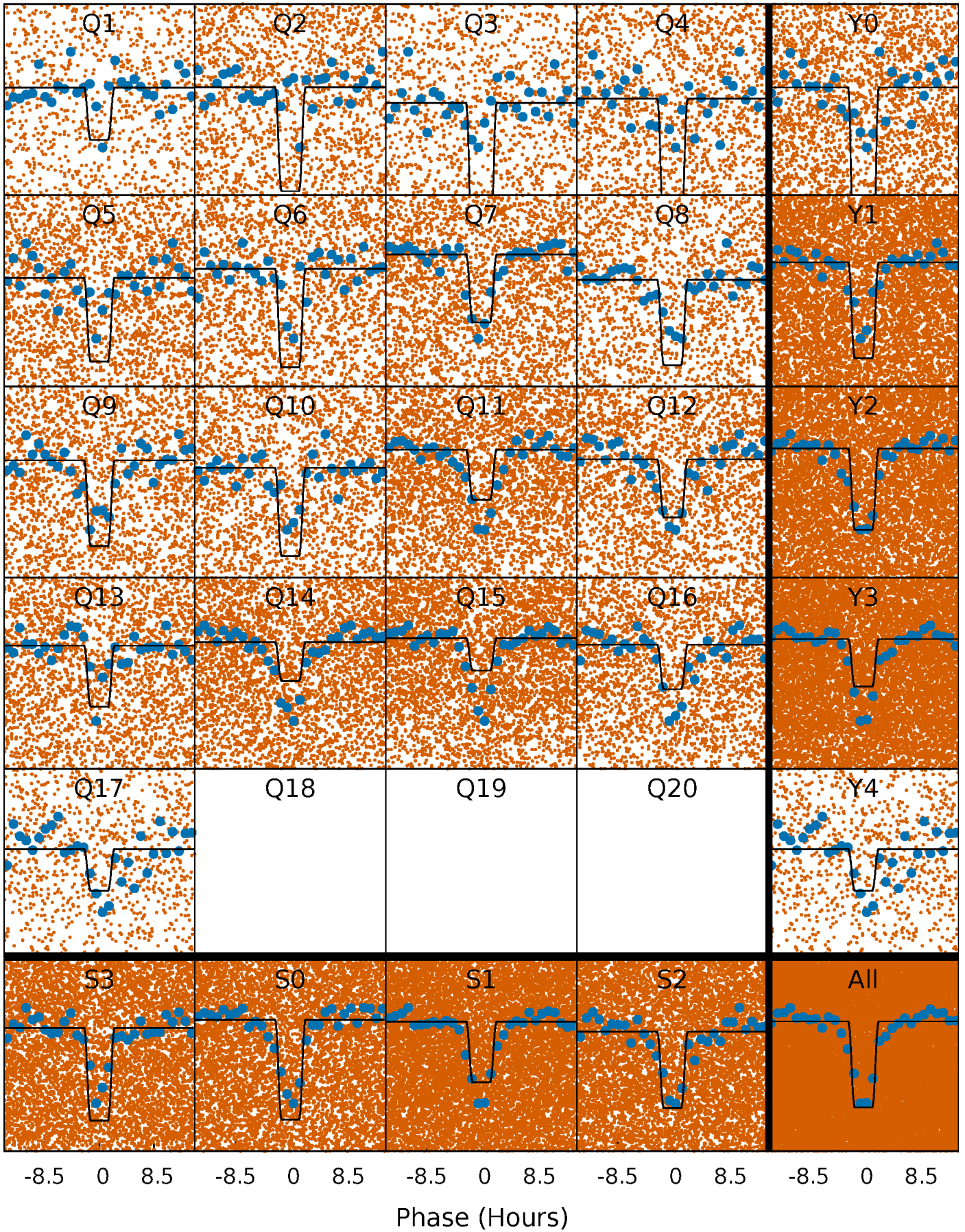
DV Quarter-Phased Transit Curves

TCE 010341878-01 P= 0.933675 Days $T_0=131.568834$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

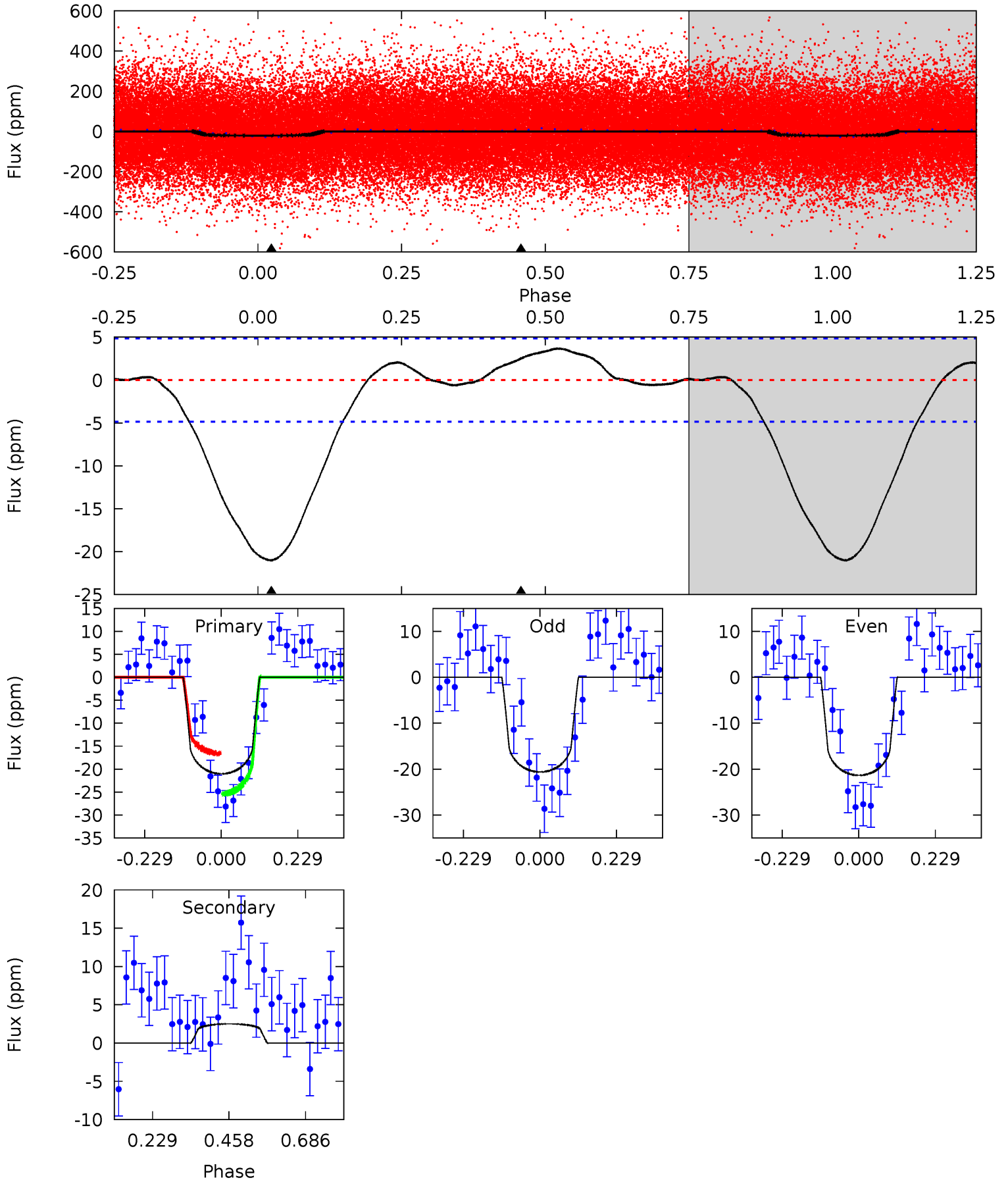
TCE 010341878-01 P= 0.933740 Days $T_0=131.525421$ (BKJD)



DV Model-Shift Uniqueness Test

010341878-01, P = 0.933675 Days, E = 130.635159 Days

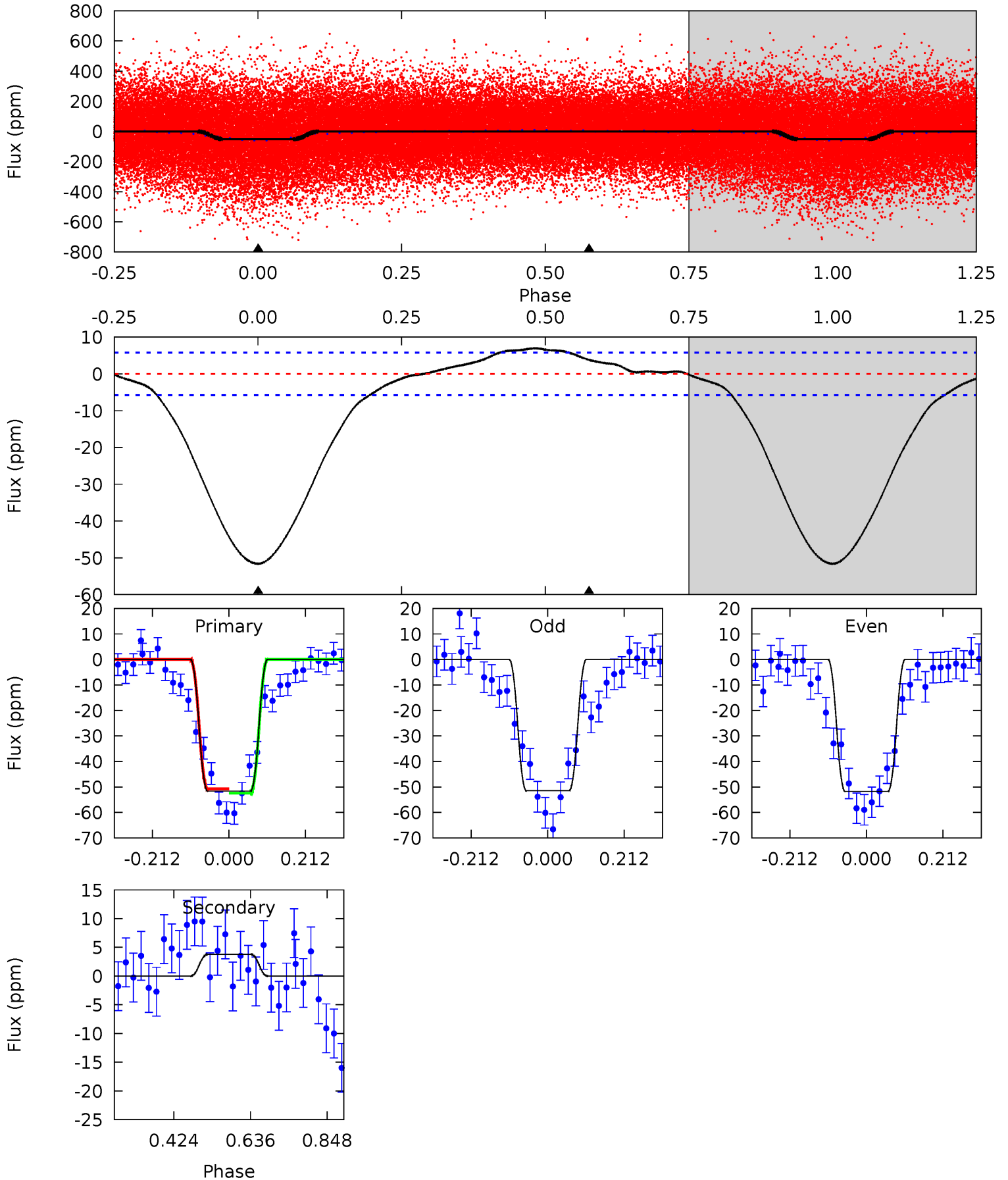
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
19.0	-2.27	0	0	4.39	1.20	0.25	19.0	19.0	-2.27	-2.27	0.33	1.16	0.15	3.95



Alt Model-Shift Uniqueness Test

010341878-01, P = 0.933740 Days, E = 130.591681 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
39.3	-2.89	0	0	4.40	1.25	1.33	39.3	39.3	-2.89	-2.89	0.11	1.27	0.12	0.65



Stellar Parameters For KIC 010341878

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7286^{+228}_{-330}	$3.998^{+0.246}_{-0.164}$	$-0.240^{+0.250}_{-0.350}$	$2.056^{+0.544}_{-0.665}$	$1.532^{+0.224}_{-0.298}$	$0.248^{+0.412}_{-0.110}$
	+3%/-5%	+6%/-4%	+104%/-146%	+26%/-32%	+15%/-19%	+166%/-44%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 010341878-01 / KOI 6220.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	3 ± 1	$0.82^{+0.38}_{-0.30}$	4355^{+344}_{-411}	-5003^{+531}_{-938}	$-0.828^{+0.489}_{-1.426}$
Alt.	4 ± 1	$1.72^{+0.44}_{-0.41}$	4346^{+353}_{-338}	-4443^{+260}_{-317}	$-0.320^{+0.145}_{-0.272}$

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

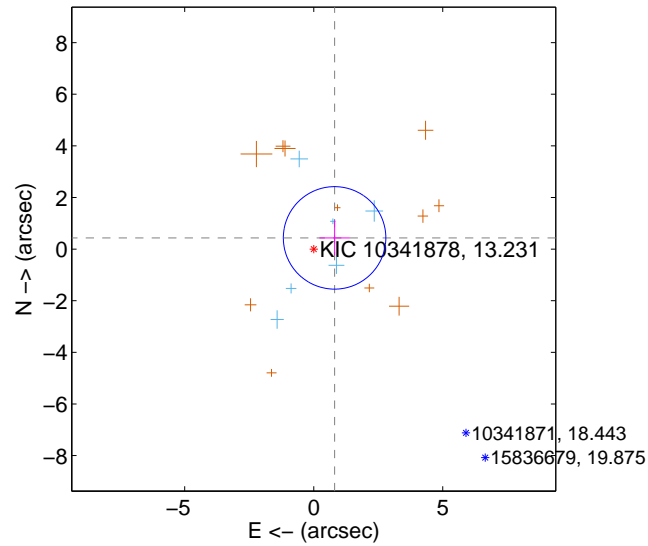
Supplemental centroid analysis for 010341878-01. Kepler magnitude: 13.23. Transit SNR 9.30

There are 6 quarters with good PRF difference image offsets

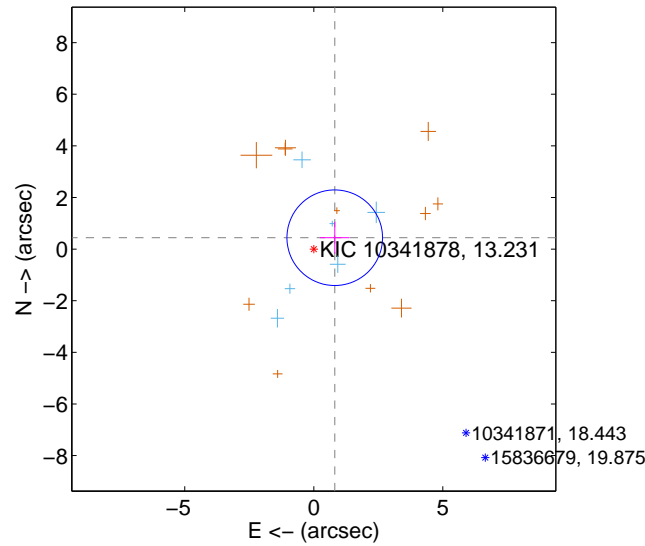
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.918 ± 0.662	1.39	-0.809 ± 0.588	0.434 ± 0.677
PRF-fit source offset from KIC position	0.924 ± 0.617	1.50	-0.812 ± 0.572	0.441 ± 0.616
photometric centroid source offset	4.51 ± 1.10	4.09	-2.53 ± 1.18	3.73 ± 1.06

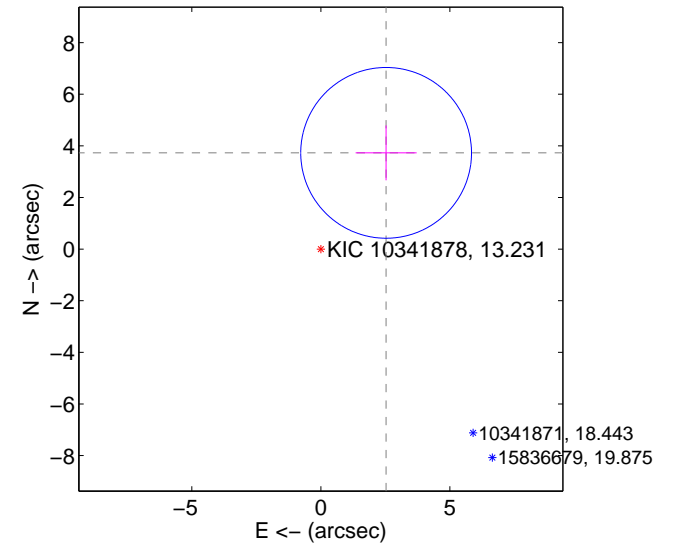
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

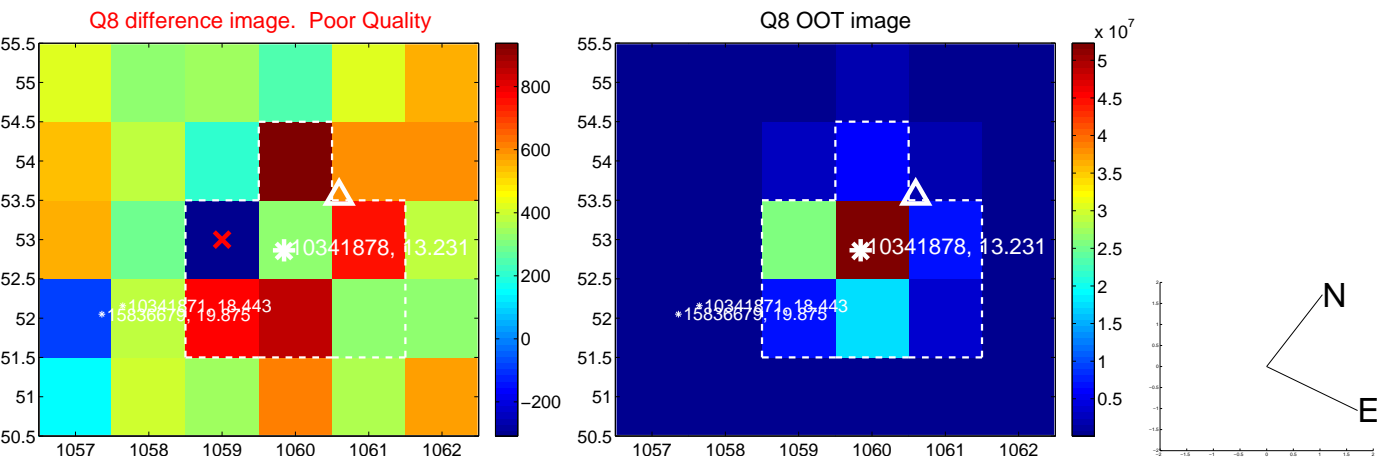
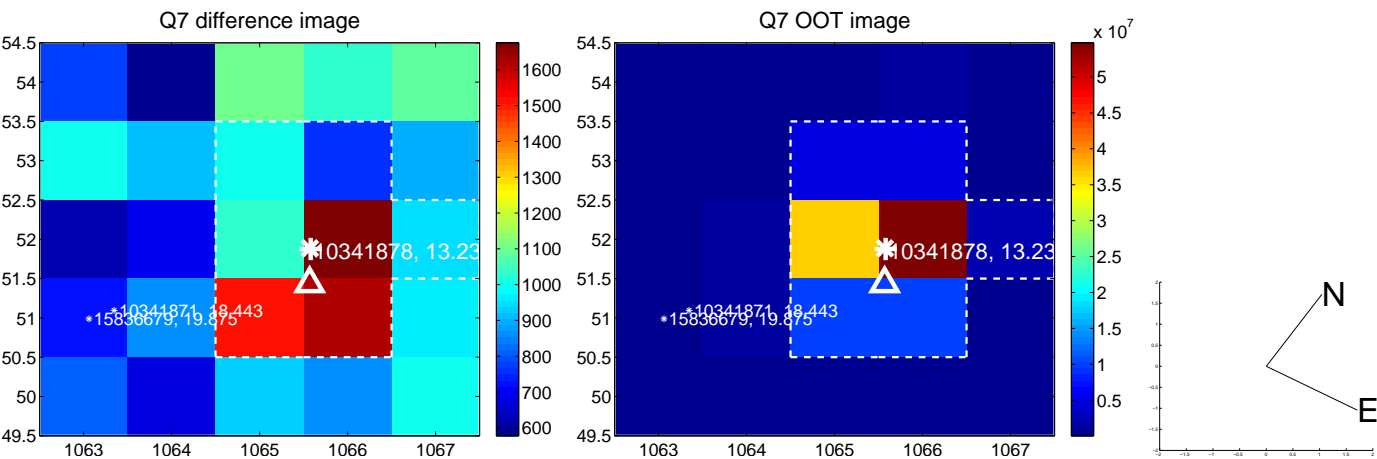
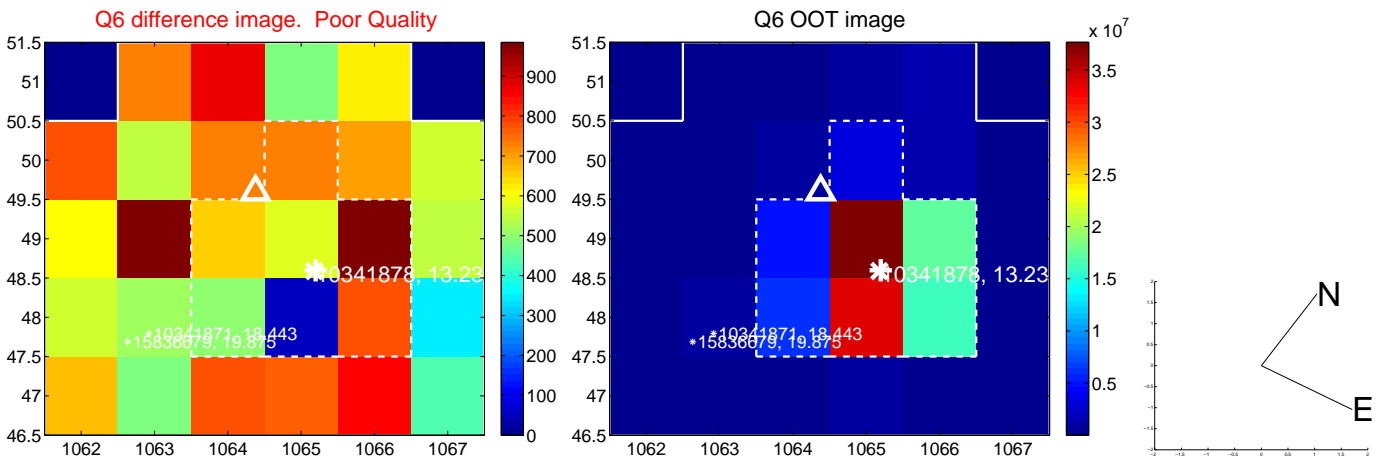
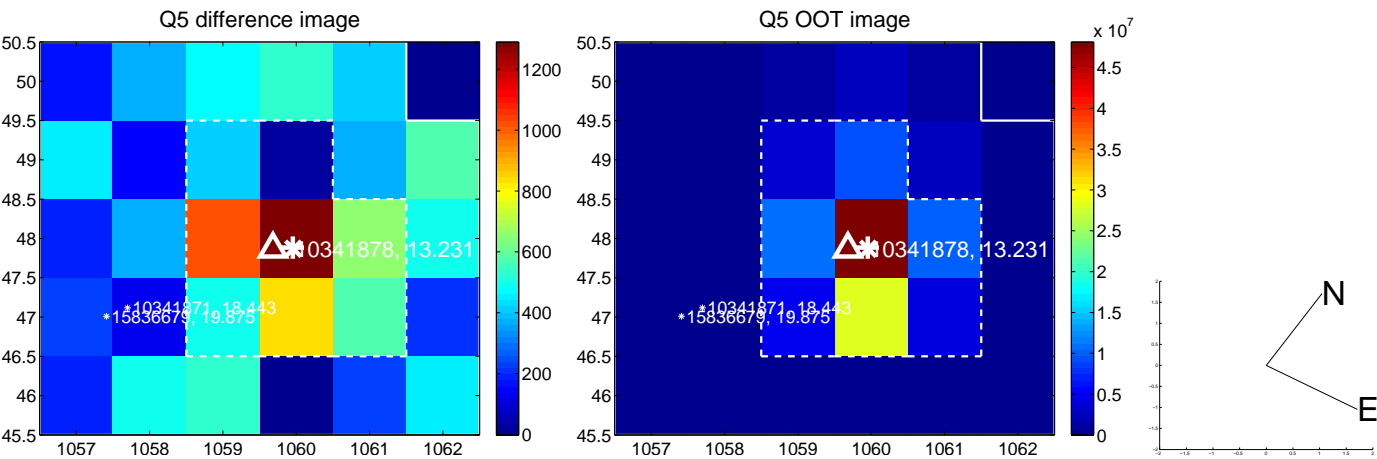


offset from photometric centroids

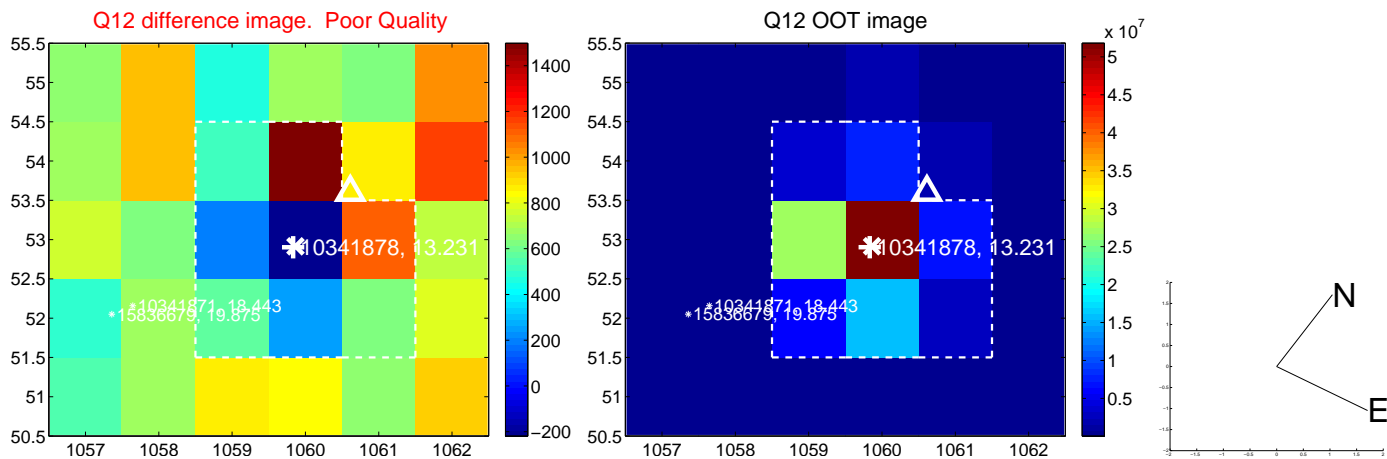
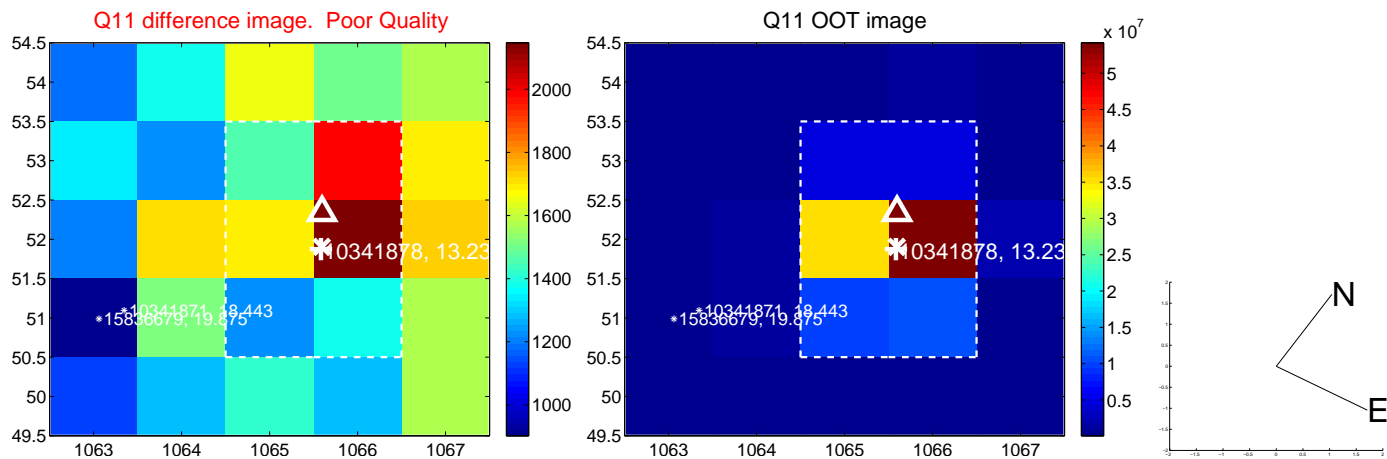
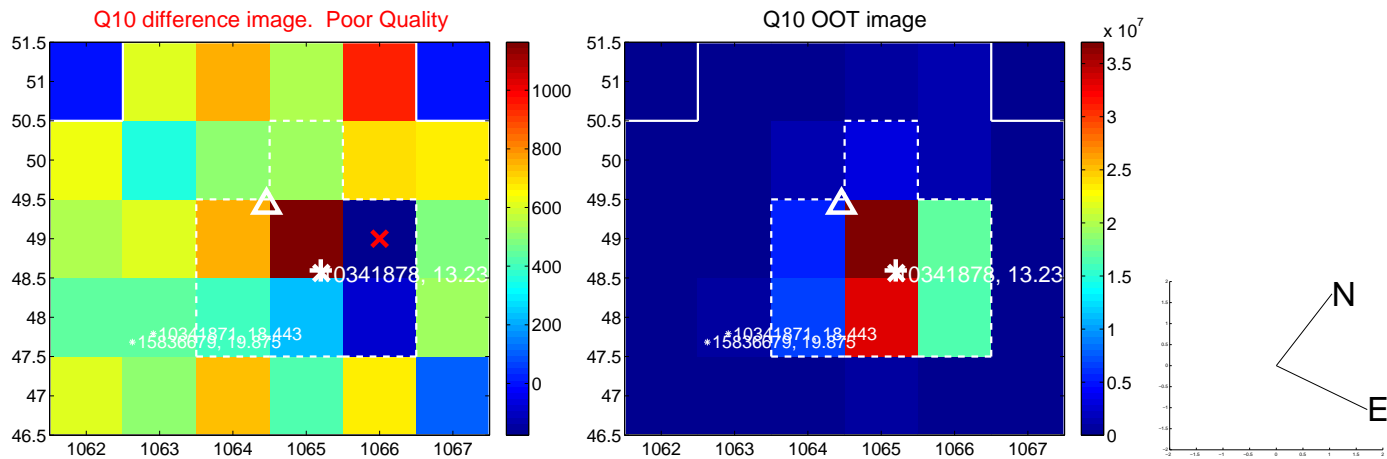
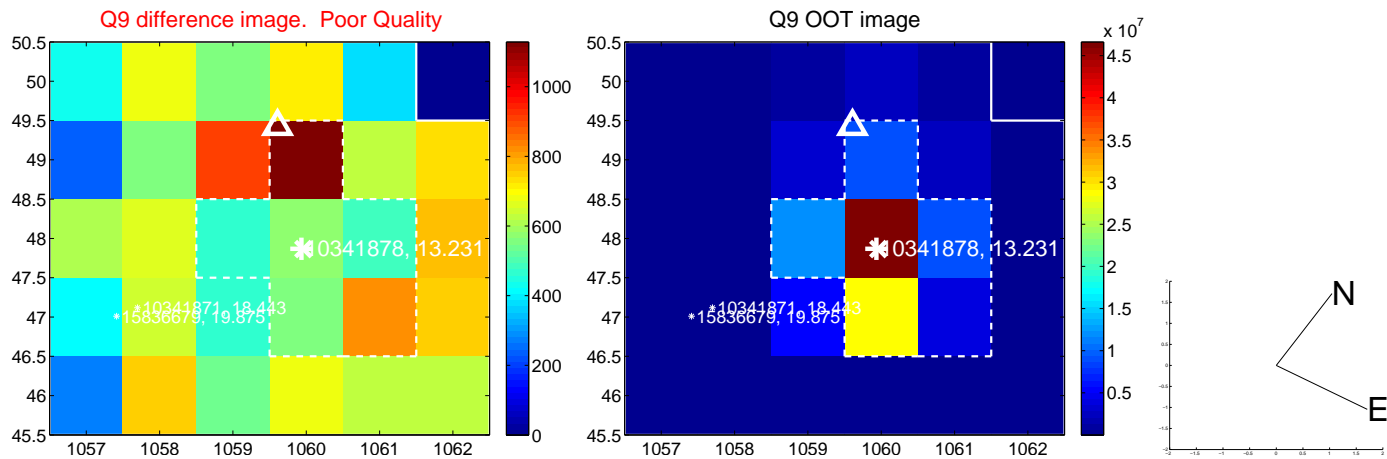


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

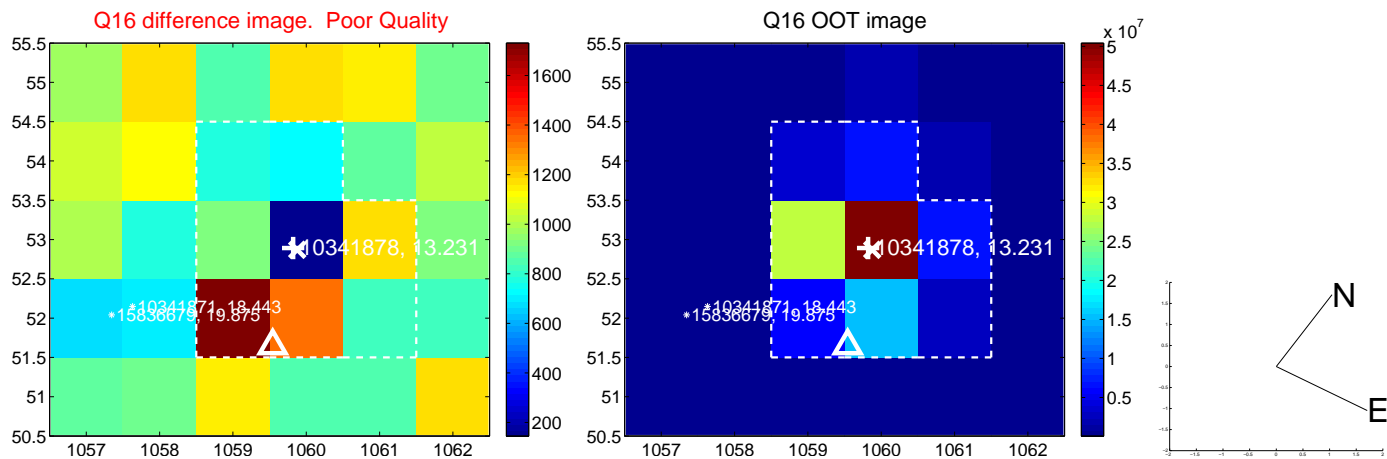
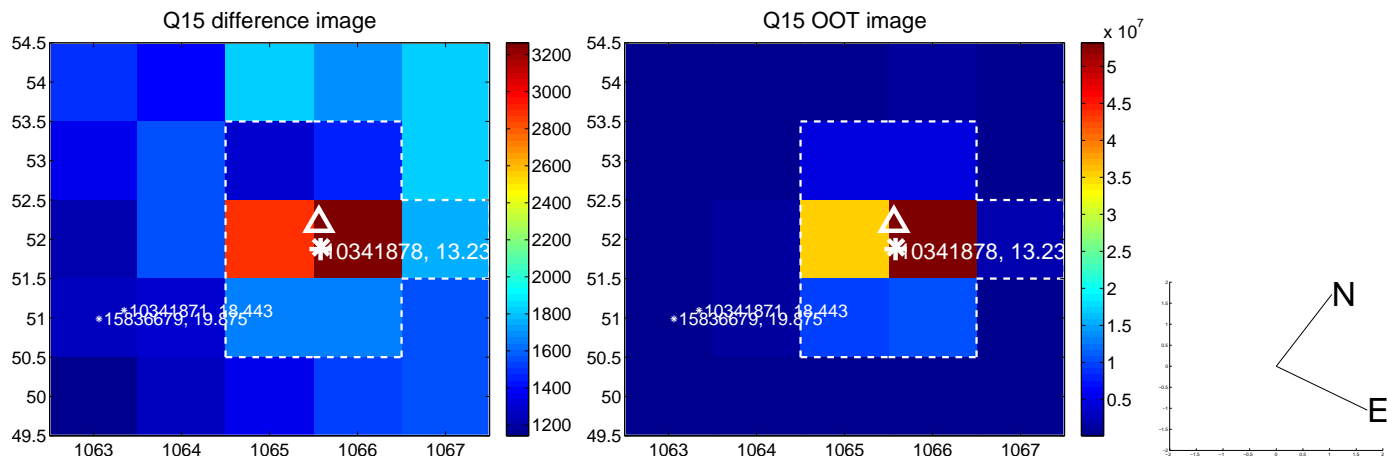
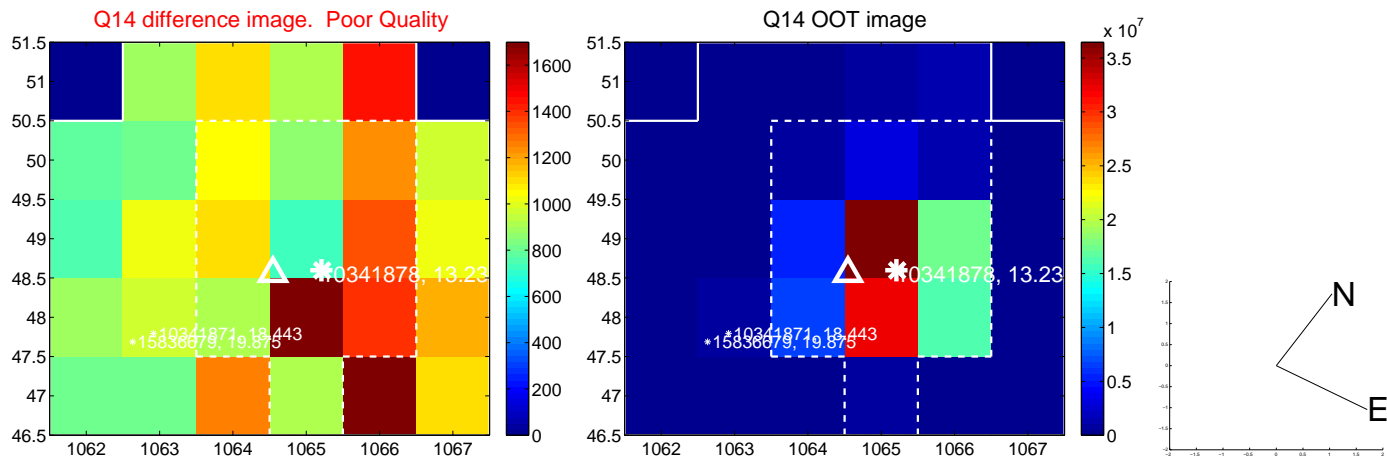
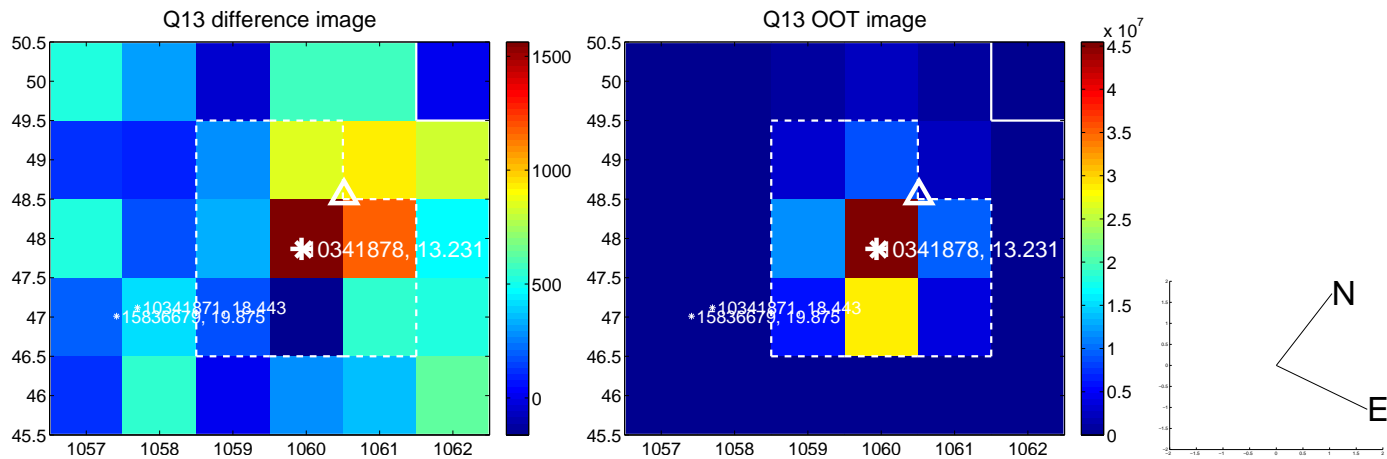
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



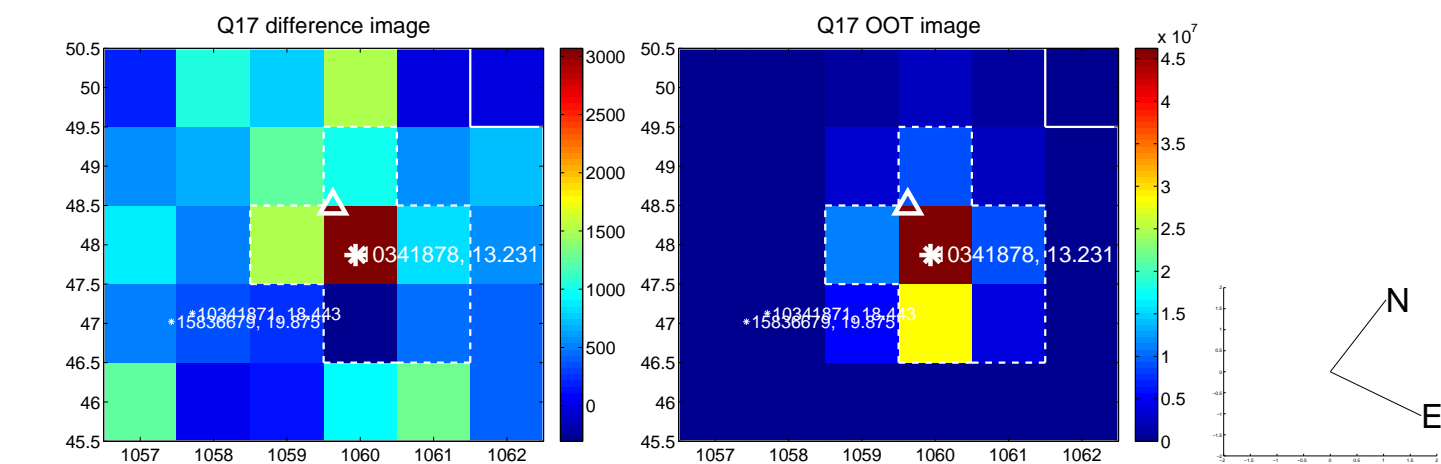
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



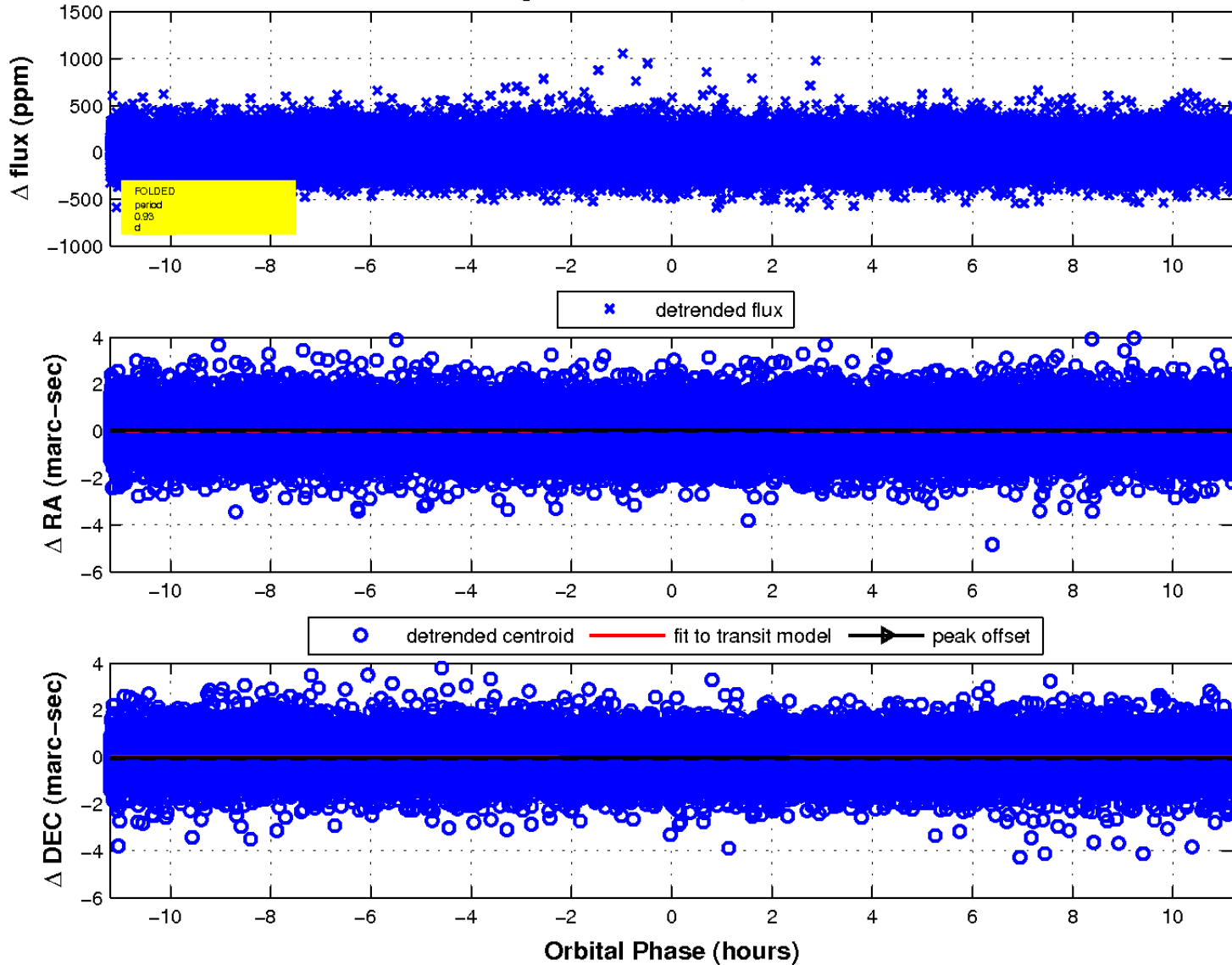
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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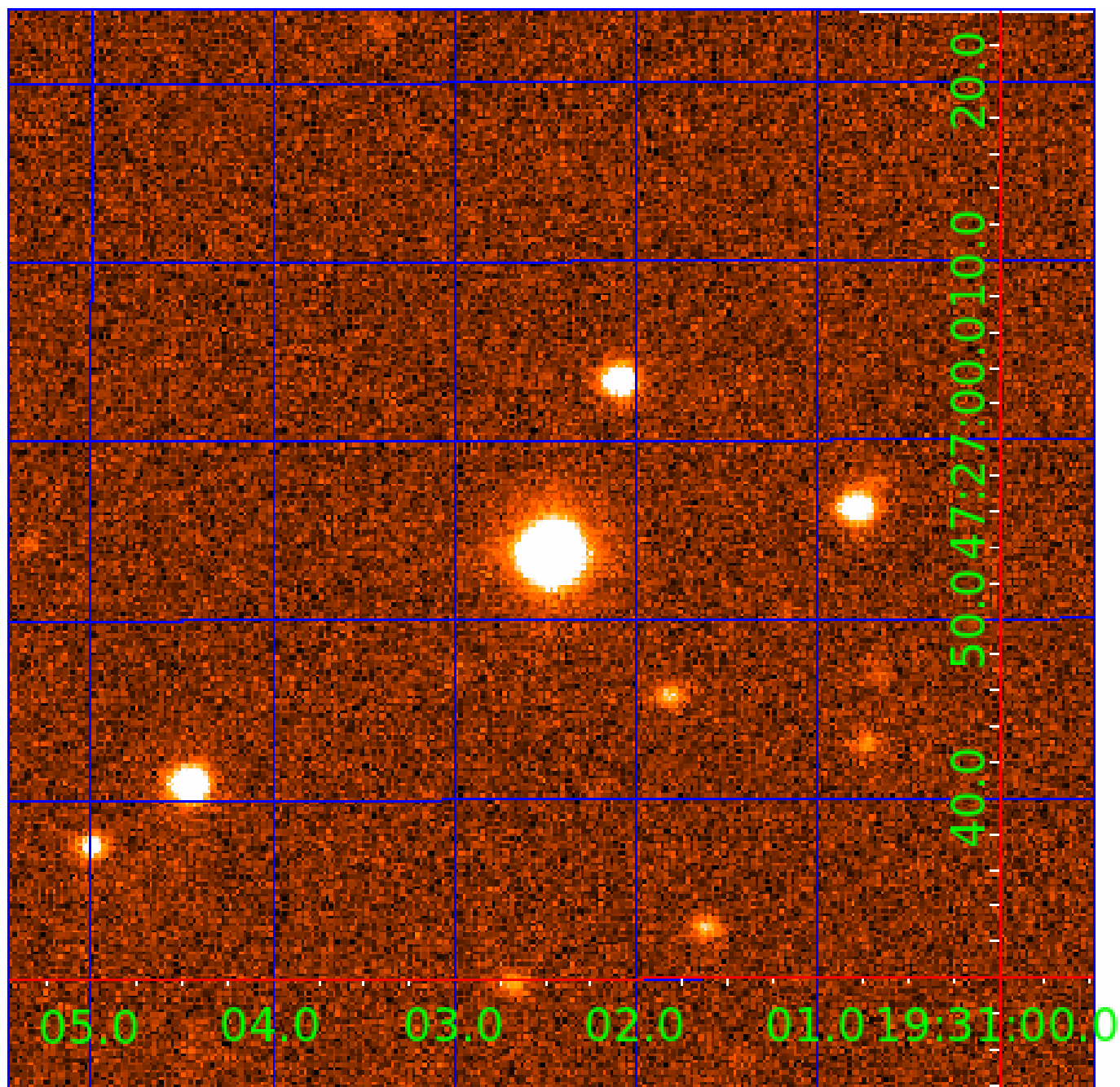


fluxWeightedCentroids, Planet 1 of 3



UKIRT Image

Declination



KIC 010341878

Q1-17 DR25 TCE Parameters

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Robovetter Results

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010341878-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—TRANS_GAPPED—SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT
010341878-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS

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

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

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

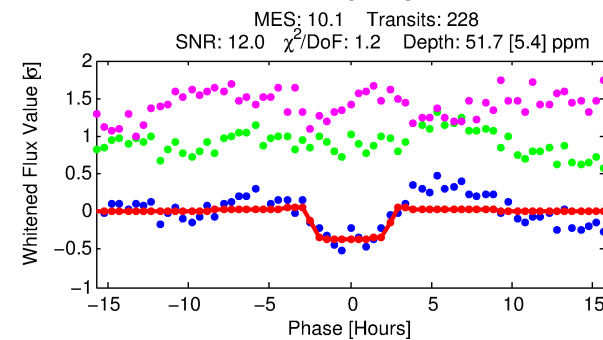
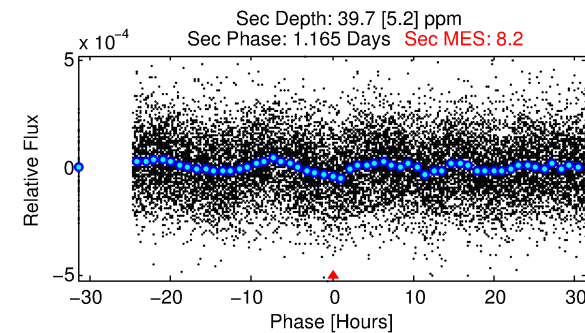
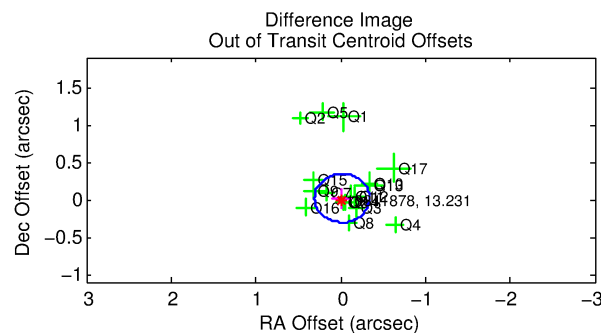
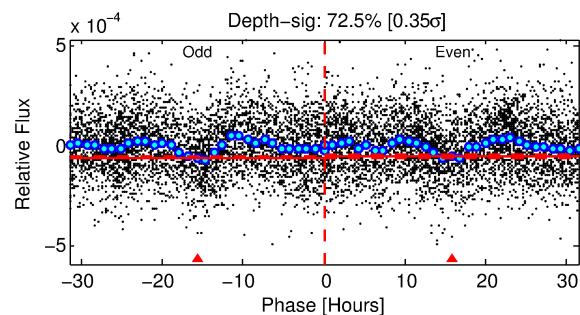
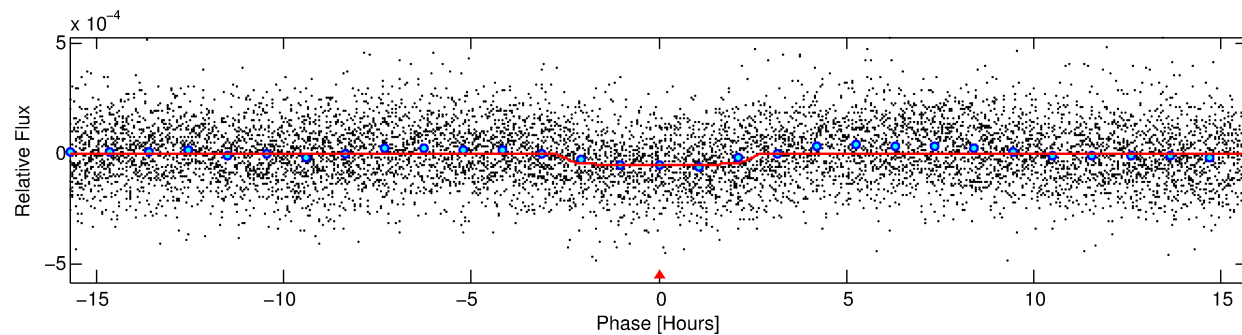
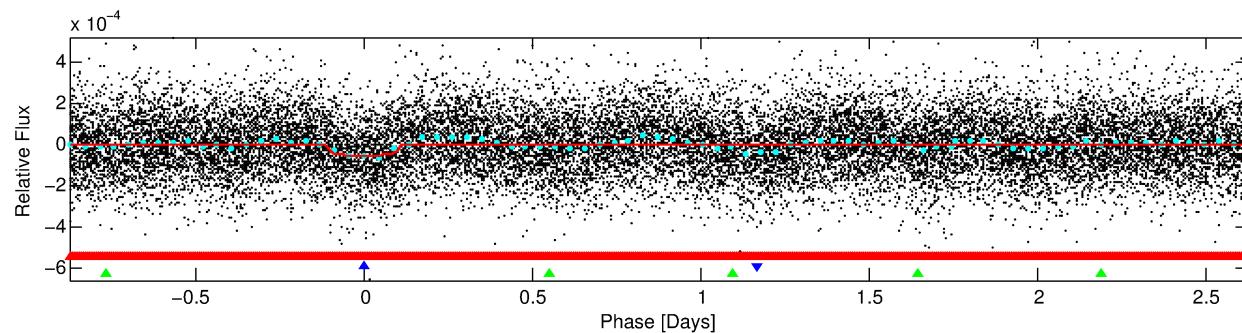
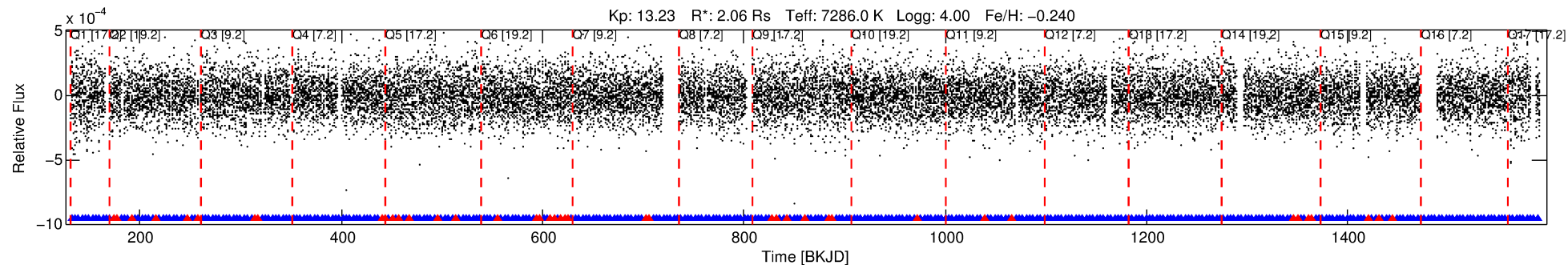
Ephemeris Match Information For 010341878-02

No Significant Match Found

DV One-Page Summary

KIC: 10341878 Candidate: 2 of 3 Period: 3.500 d
KOI: K06220 Corr: No Ephemeris Match

Kp: 13.23 R*: 2.06 Rs Teff: 7286.0 K Logg: 4.00 Fe/H: -0.240



DV Fit Results:

Period = 3.50040 [0.00003] d
Epoch = 132.1328 [0.0056] BKJD
Rp/R* = 0.0078 [0.0018]
a/R* = 2.21 [2.54]
b = 0.93 [0.22]
Seff = 3938.91 [1855.55]
Teq = 2020 [238] K
Rp = 1.76 [0.70] Re
a = 0.0521 [0.0149] AU
Ag = 19.09 [12.39] [1.46σ]
Teffp = 6529 [840] K [5.16σ]

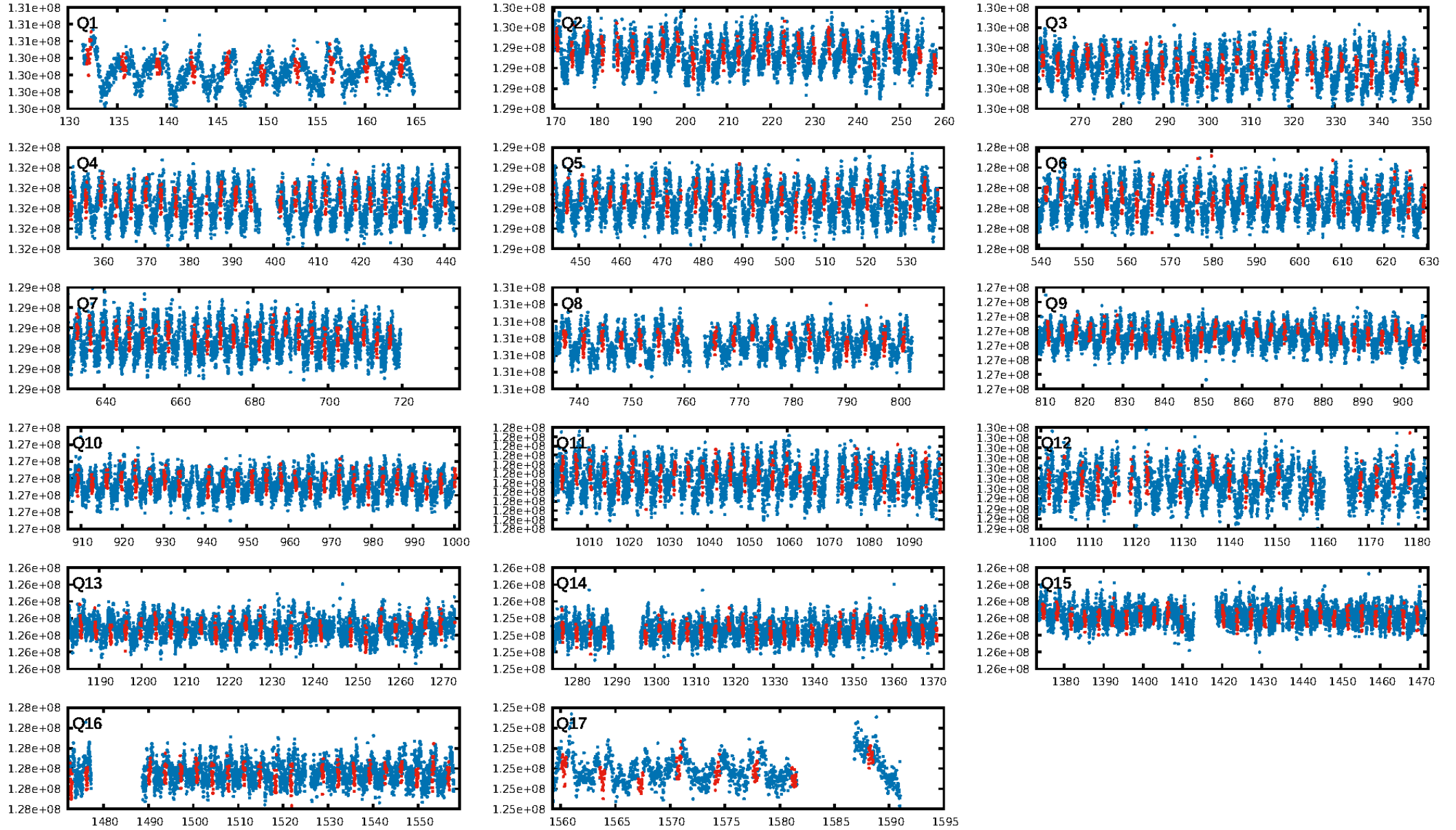
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [8.76σ]
LongPeriod-sig: 100.0% [849.22σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 2.54e-17
RollingBand-fgt: 0.81 [175/216]
GhostDiagnostic-chr: 1.4
Centroid-sig: 2.3%
Centroid-so: 0.949 arcsec [1.56σ]
OotOffset-rm: 0.024 arcsec [0.22σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-rm: 0.047 arcsec [0.44σ]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 1.00 [17/17]
DiffImageOverlap-fno: 0.00 [0/17]

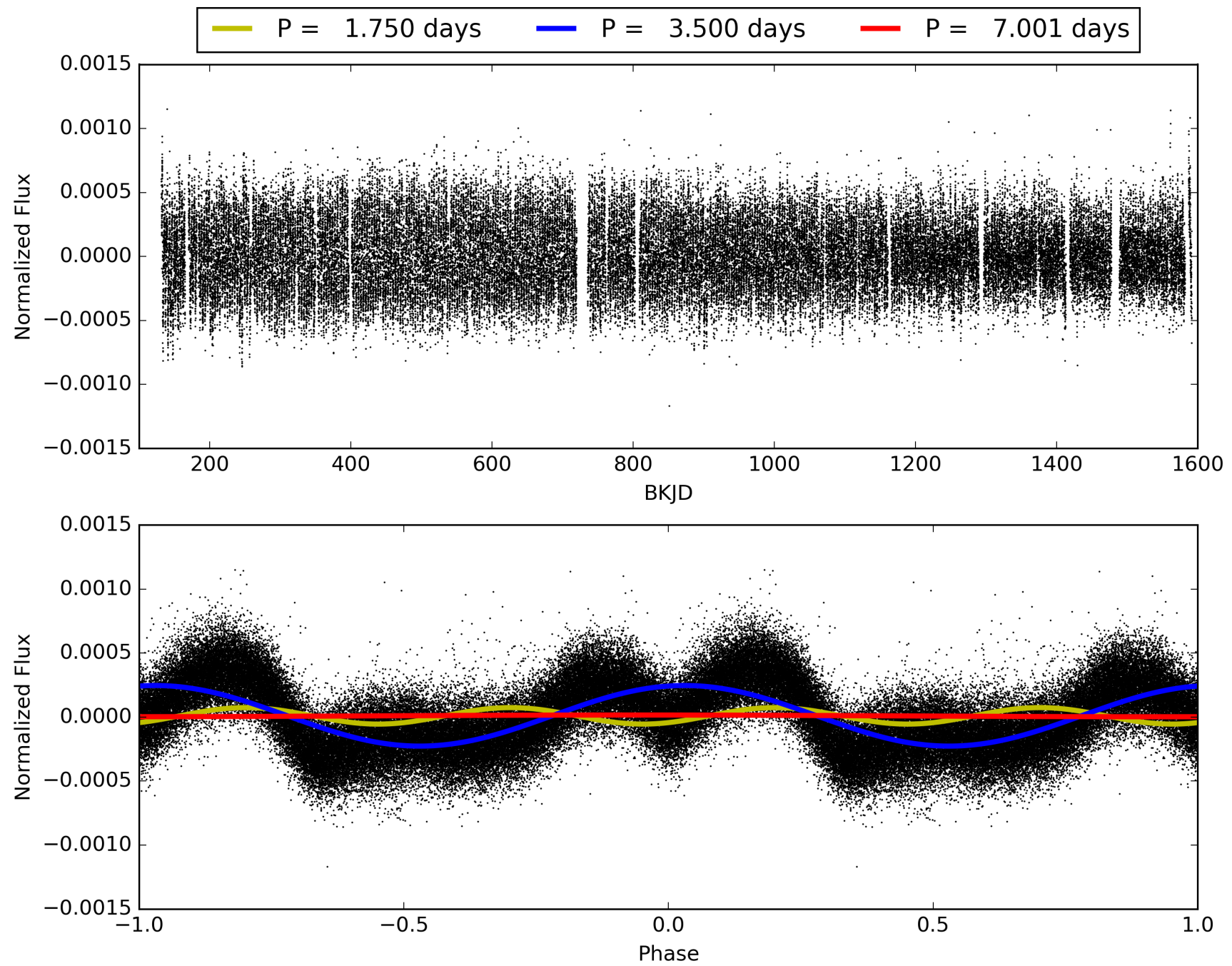
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 10:06:44 Z

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

TCE 010341878-02, PDC Light Curves

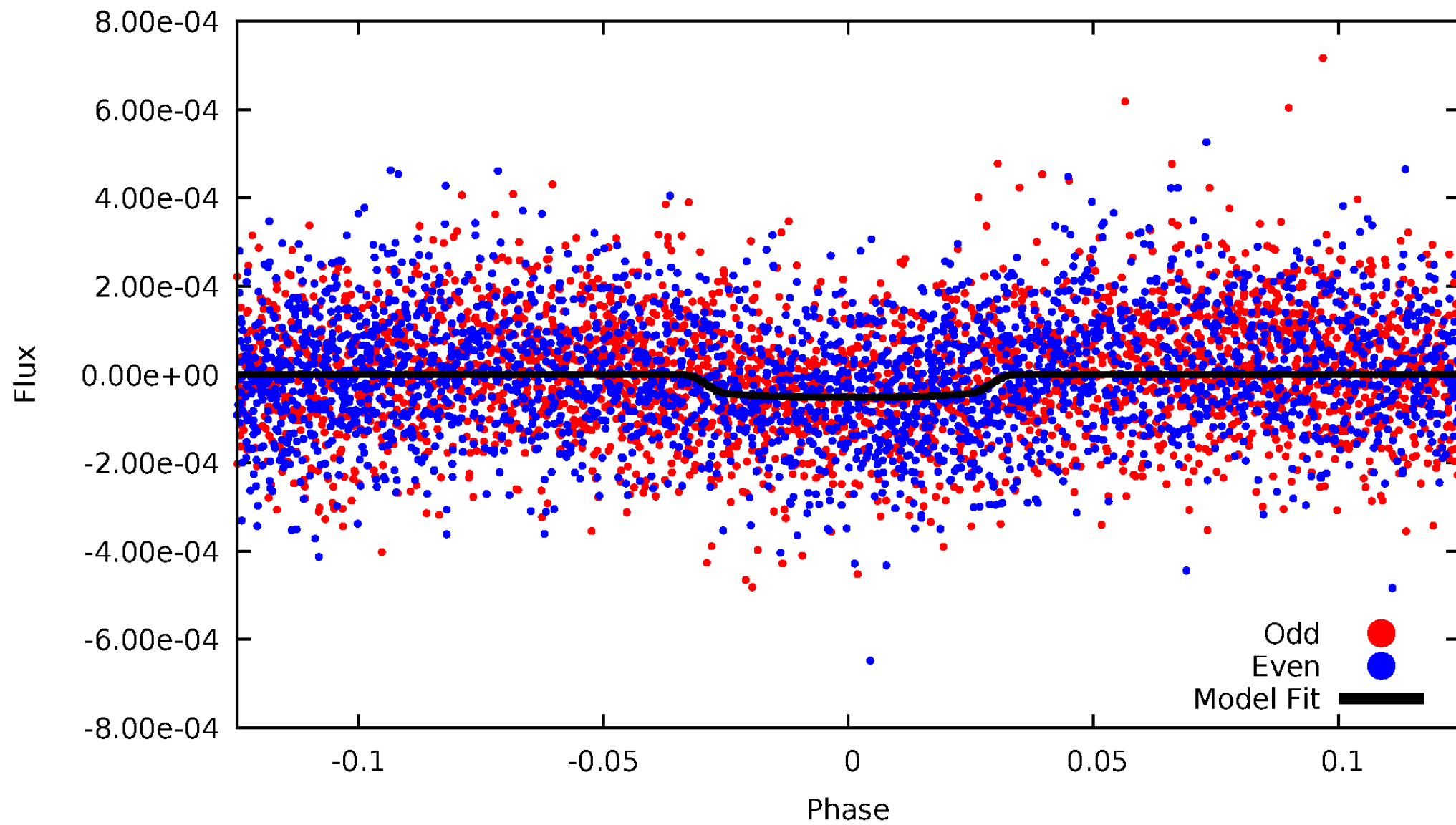


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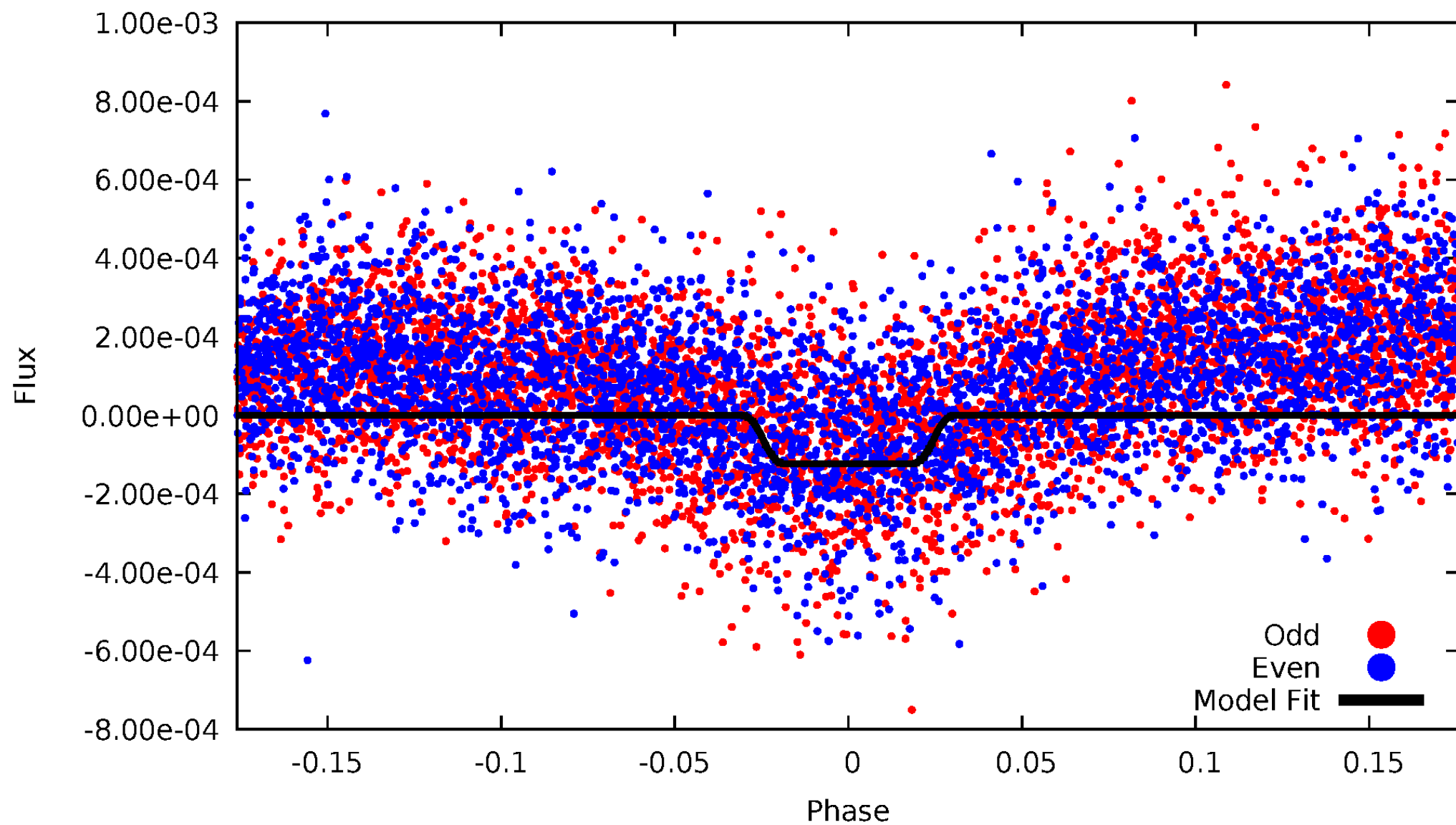
DV Odd/Even

TCE 010341878-02



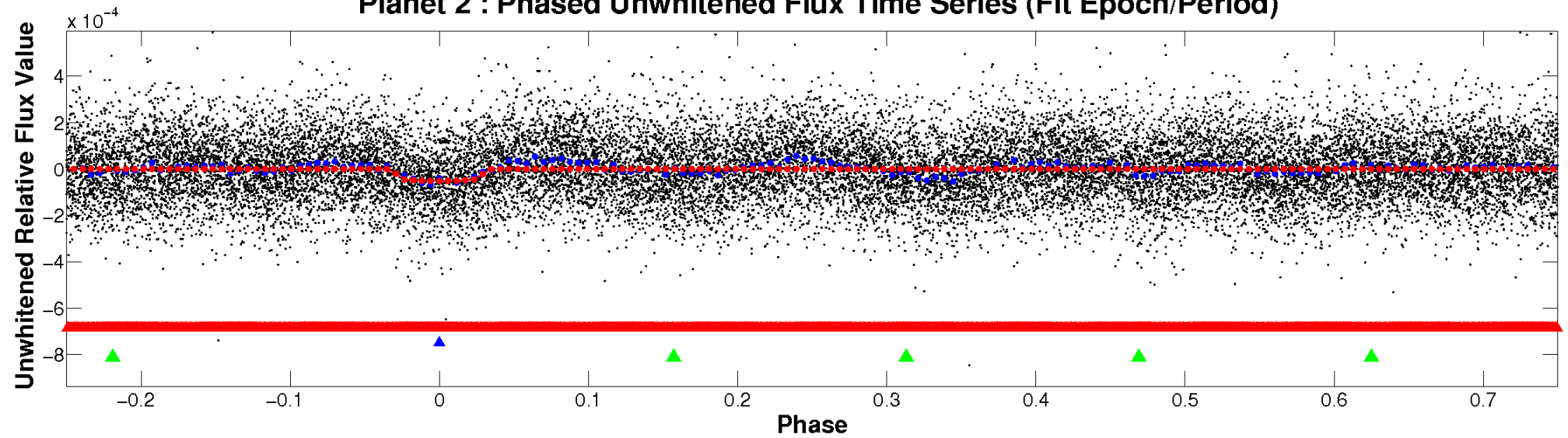
ALT Odd/Even

TCE 010341878-02

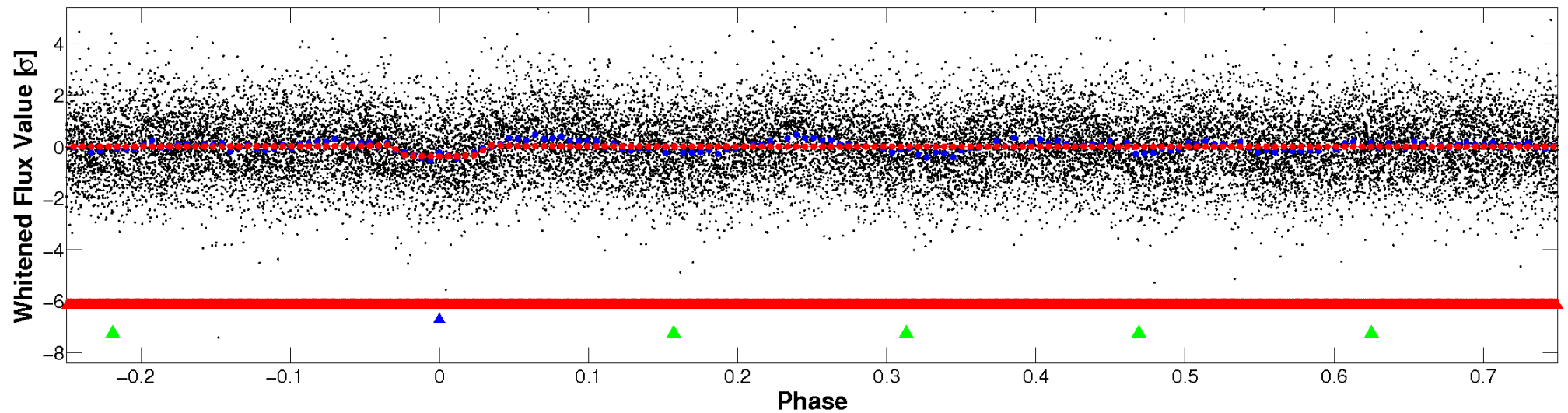


Non-Whitened Vs. Whitened Light Curve

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

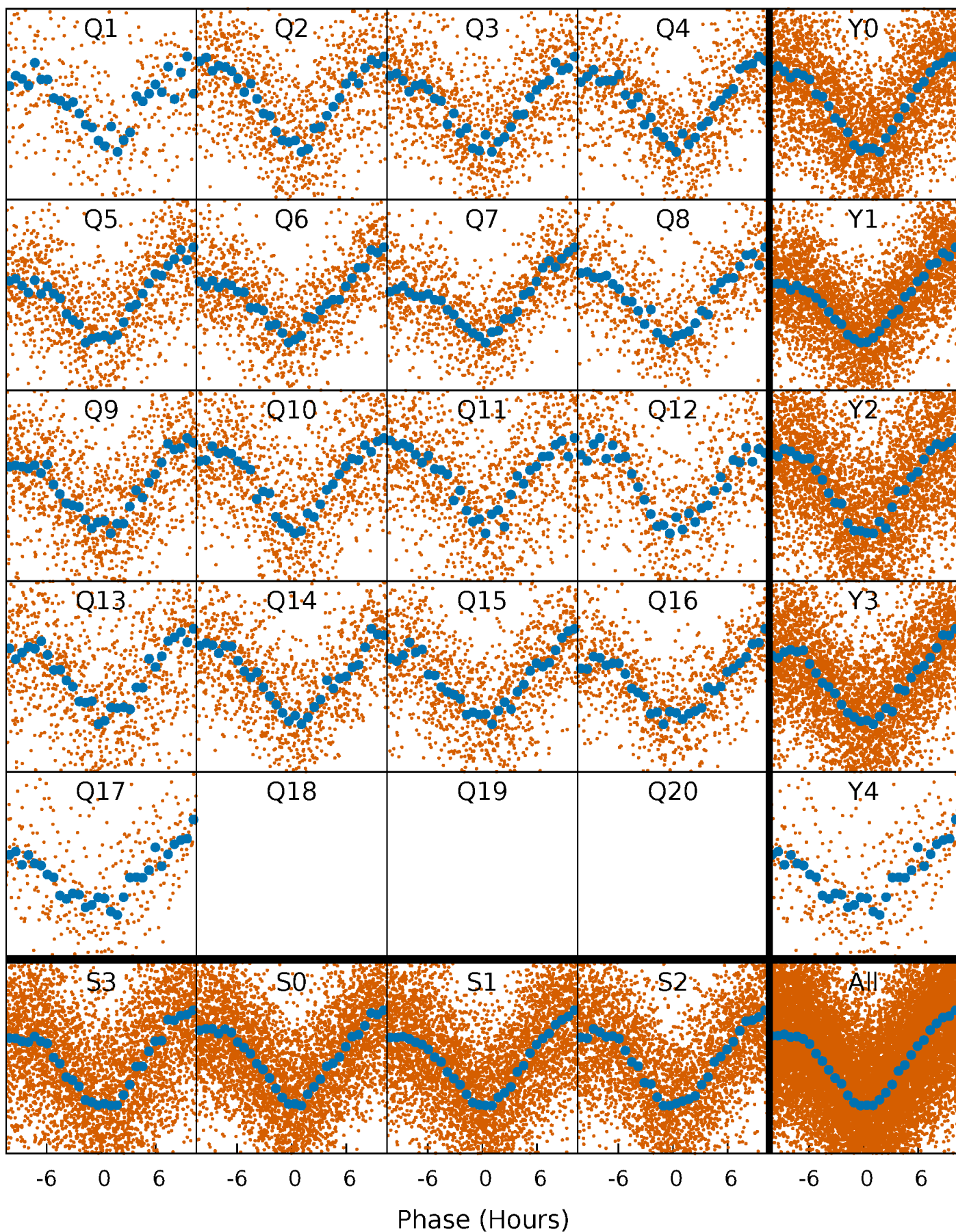


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



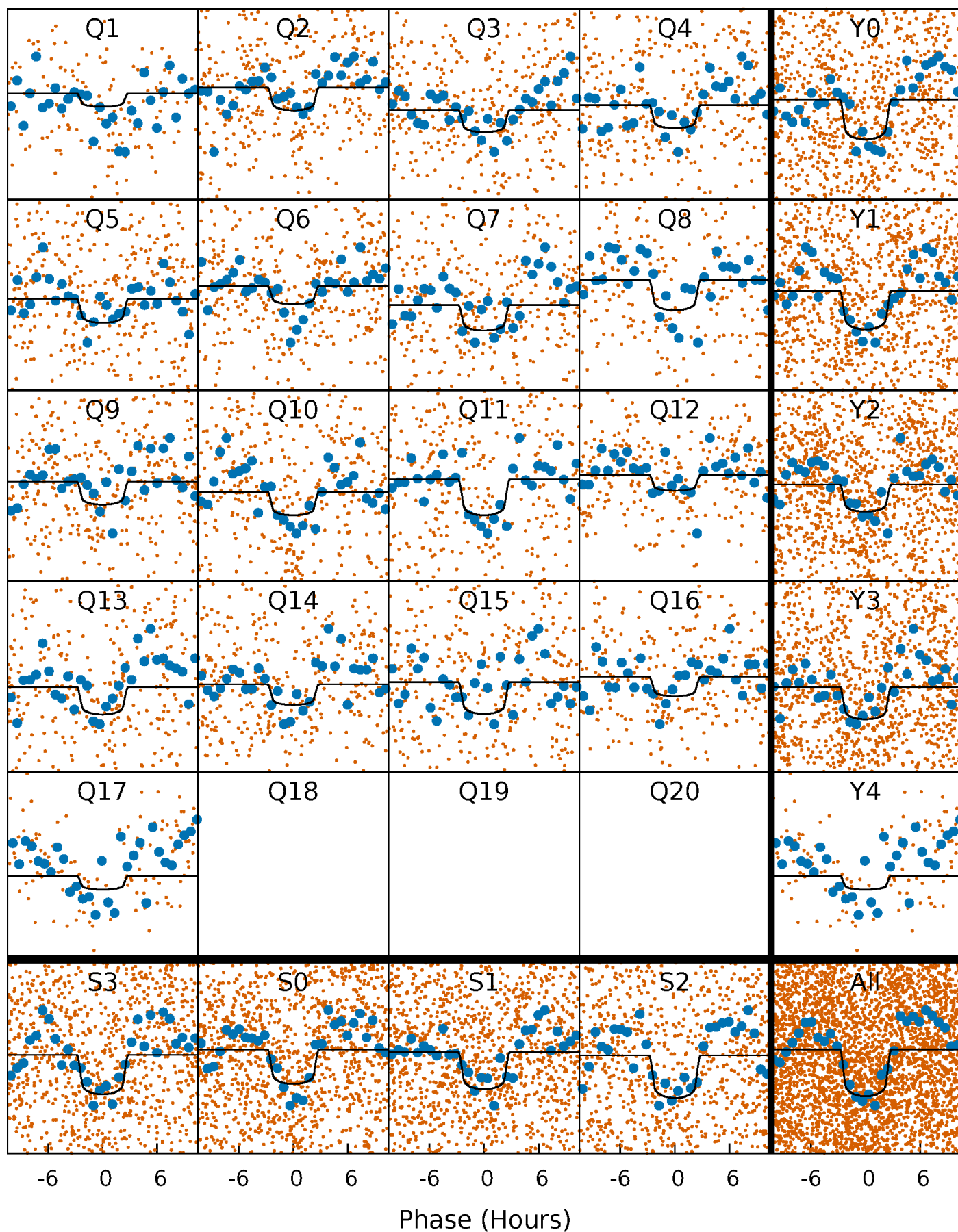
PDC Quarter-Phased Transit Curves

TCE 010341878-02 P= 3.500398 Days $T_0=132.132756$ (BKJD)



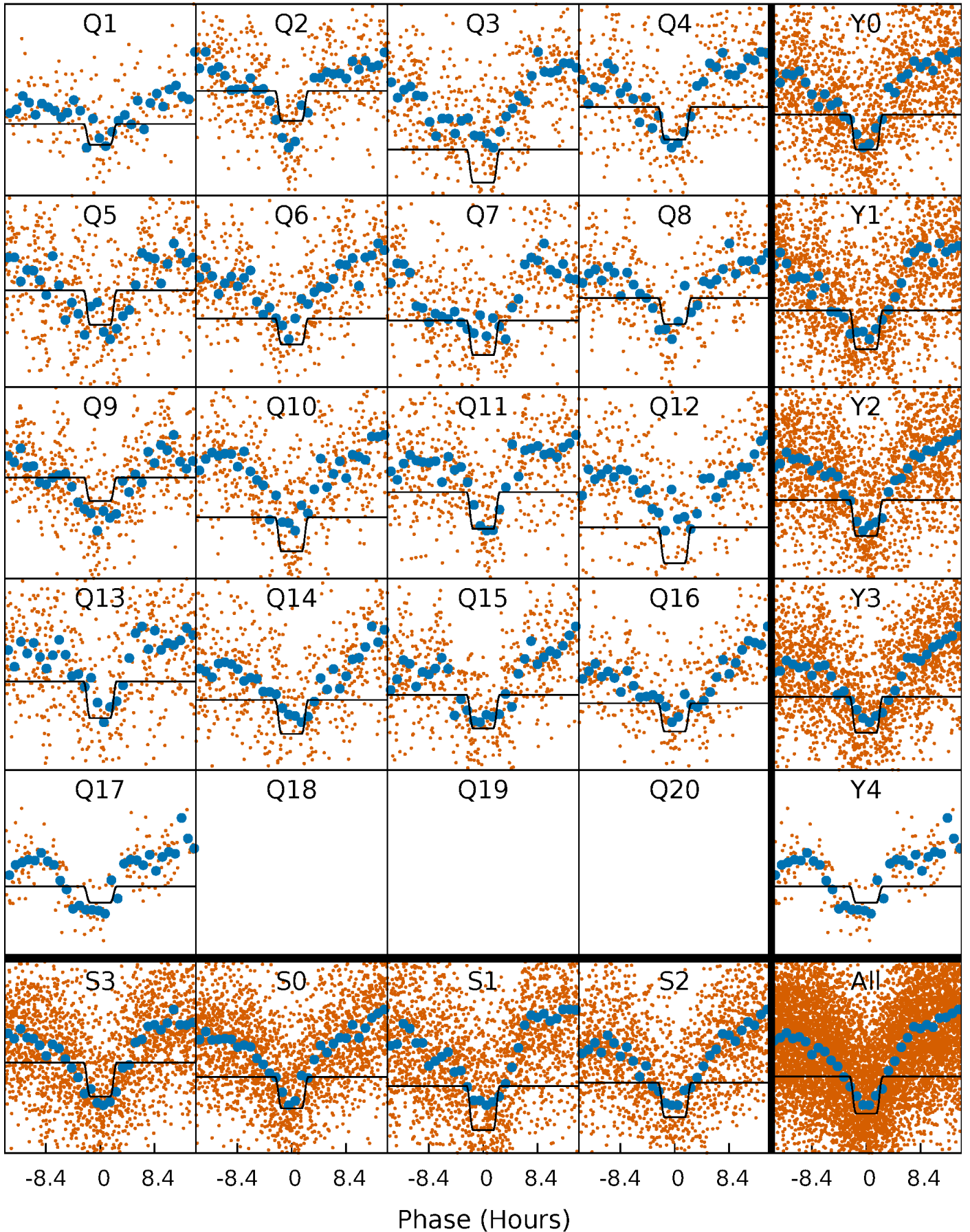
DV Quarter-Phased Transit Curves

TCE 010341878-02 P= 3.500398 Days $T_0=132.132756$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

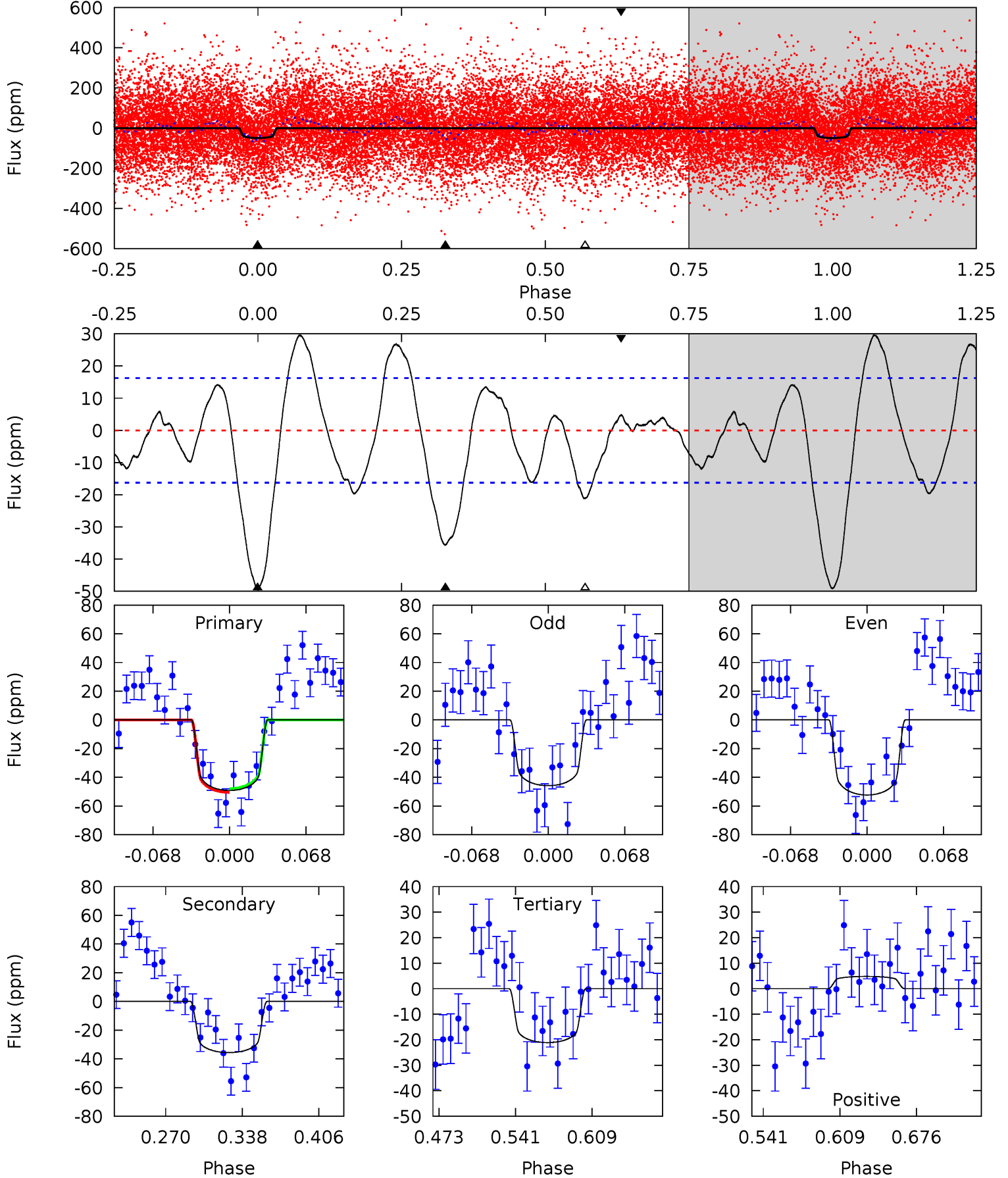
TCE 010341878-02 P= 3.500133 Days $T_0=132.180108$ (BKJD)



DV Model-Shift Uniqueness Test

010341878-02, P = 3.500398 Days, E = 128.632358 Days

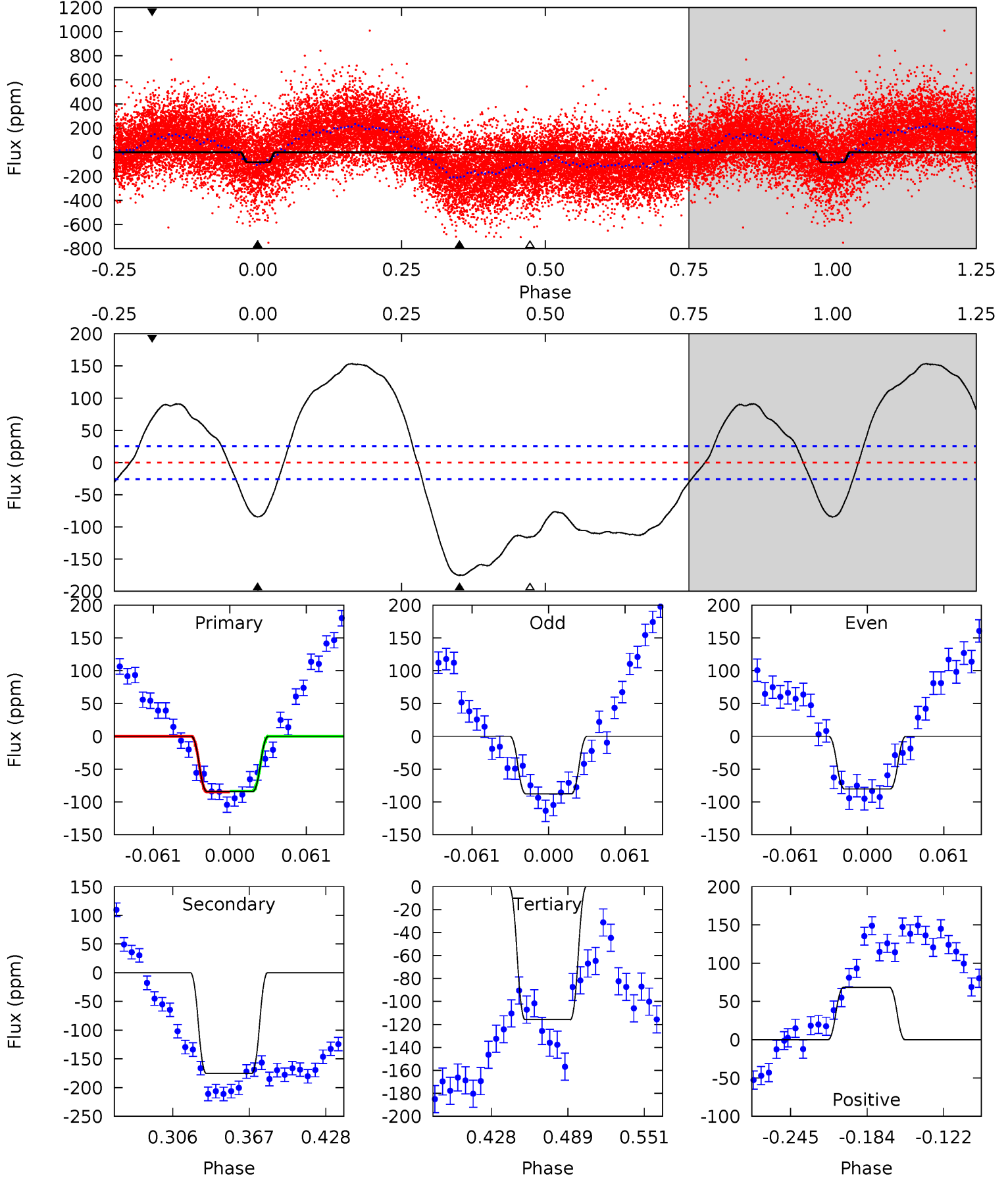
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.1	10.2	6.04	1.37	4.65	1.83	3.34	8.03	12.7	4.15	8.82	0.93	1.16	0.38	0.36



Alt Model-Shift Uniqueness Test

010341878-02, P = 3.500133 Days, E = 128.679975 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.3	31.8	21.0	12.4	4.67	1.87	18.0	-5.71	2.83	10.8	19.3	0.67	1.16	0.47	0.12



Stellar Parameters For KIC 010341878

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7286^{+228}_{-330}	$3.998^{+0.246}_{-0.164}$	$-0.240^{+0.250}_{-0.350}$	$2.056^{+0.544}_{-0.665}$	$1.532^{+0.224}_{-0.298}$	$0.248^{+0.412}_{-0.110}$
	+3%/-5%	+6%/-4%	+104%/-146%	+26%/-32%	+15%/-19%	+166%/-44%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 010341878-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-36 ± 3	$1.68^{+0.53}_{-0.44}$	2793^{+232}_{-244}	6292^{+1011}_{-710}	18^{+15}_{-8}
Alt.	-175 ± 6	$2.45^{+0.60}_{-0.54}$	2782^{+228}_{-241}	7972^{+1035}_{-791}	43^{+27}_{-15}

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 $A_{obs} \gg 1.0$

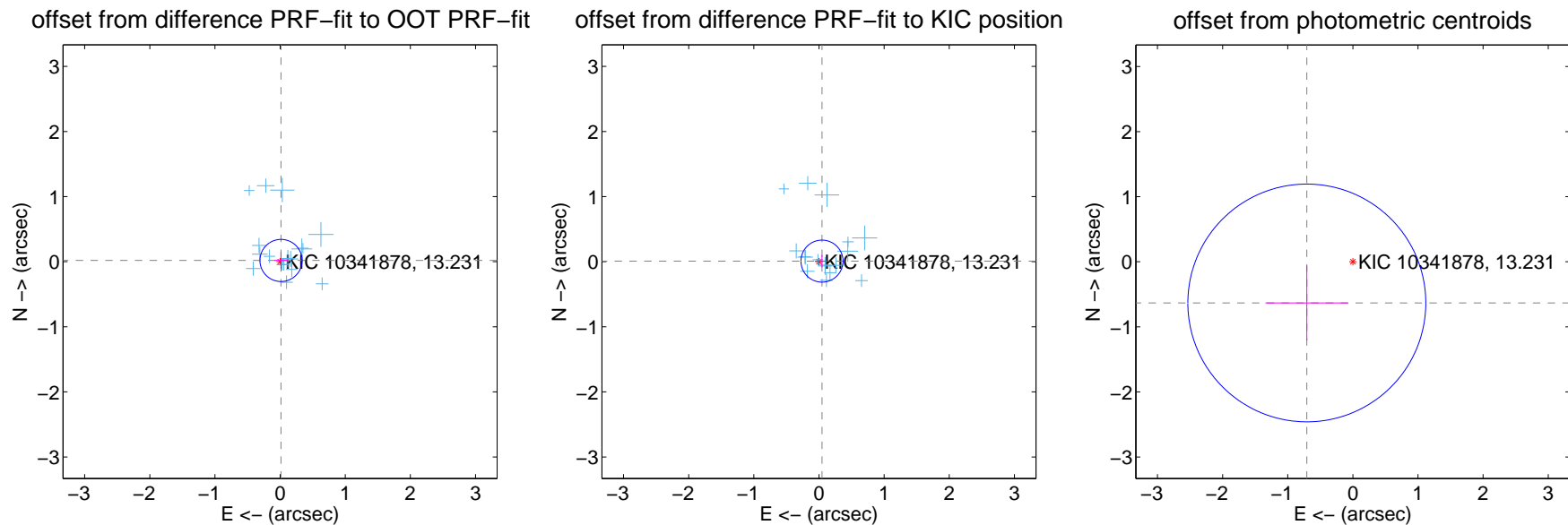
DV Centroid Data

Supplemental centroid analysis for 010341878-02. Kepler magnitude: 13.23. Transit SNR 12.03

There are 17 quarters with good PRF difference image offsets

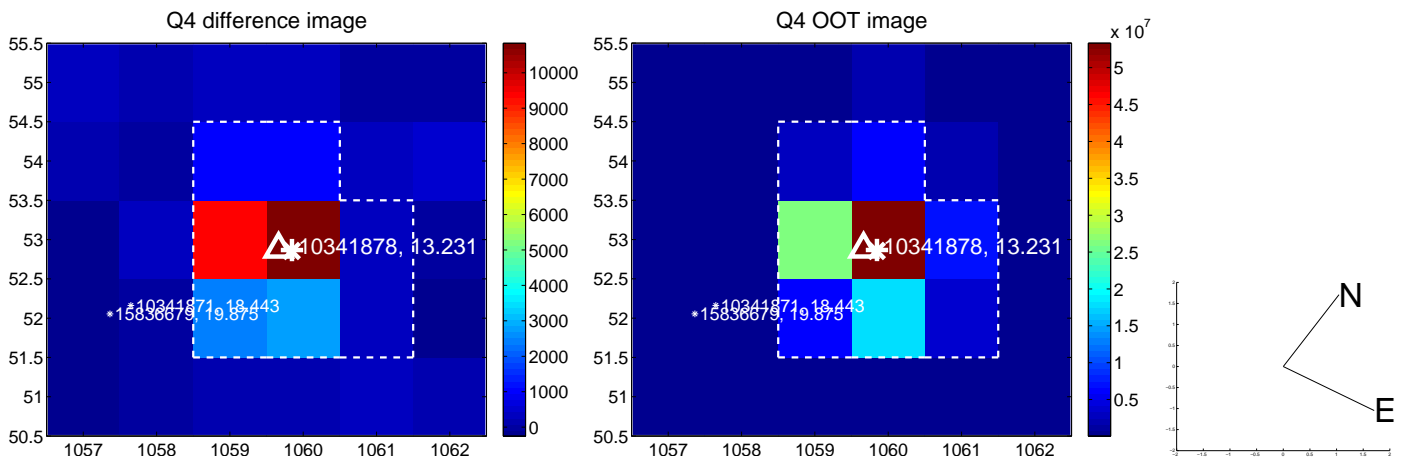
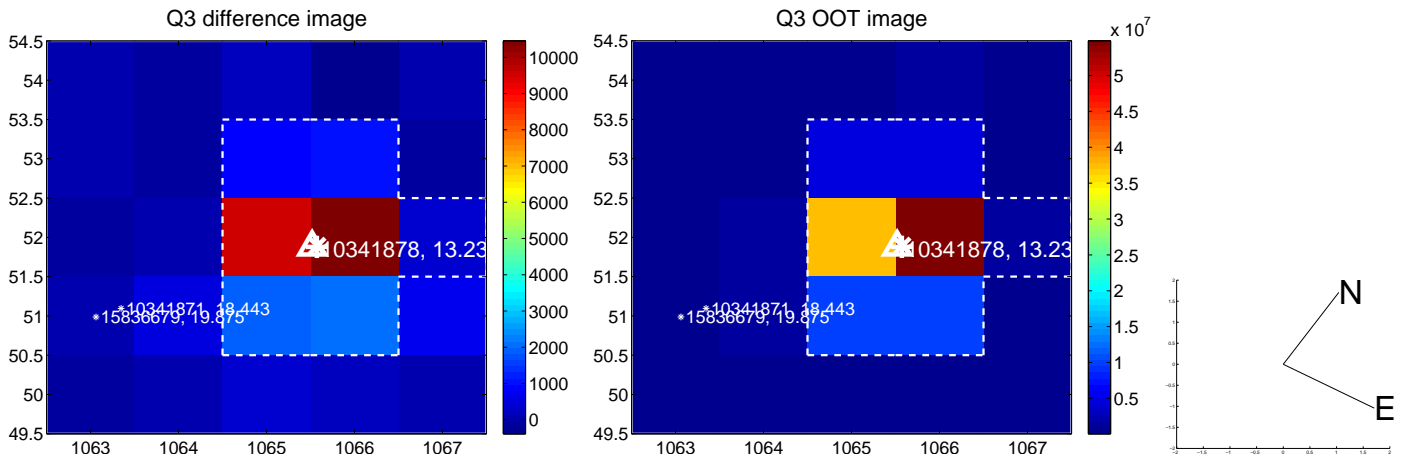
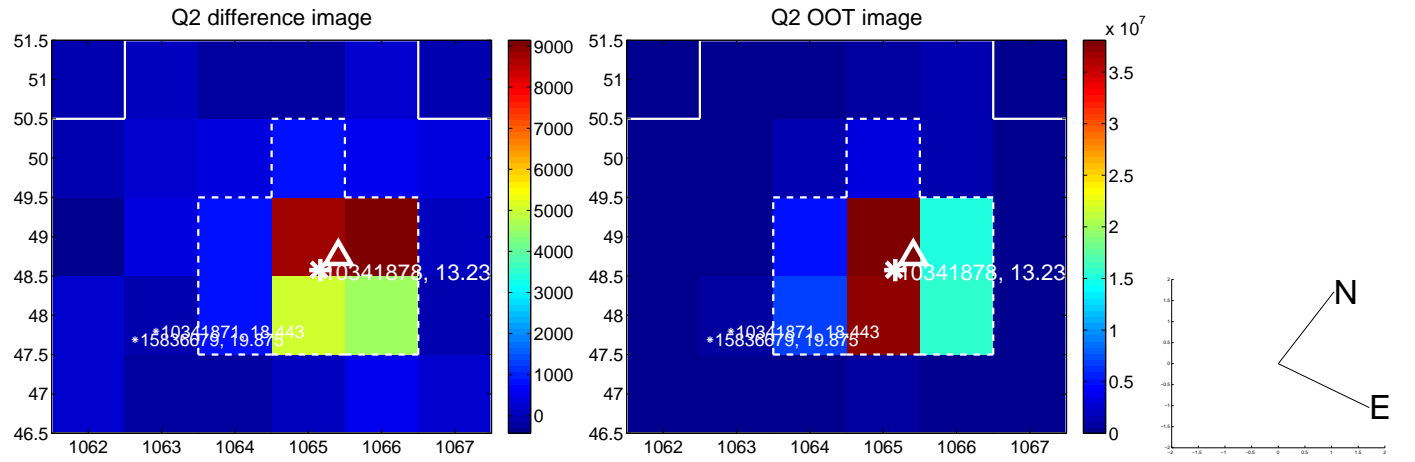
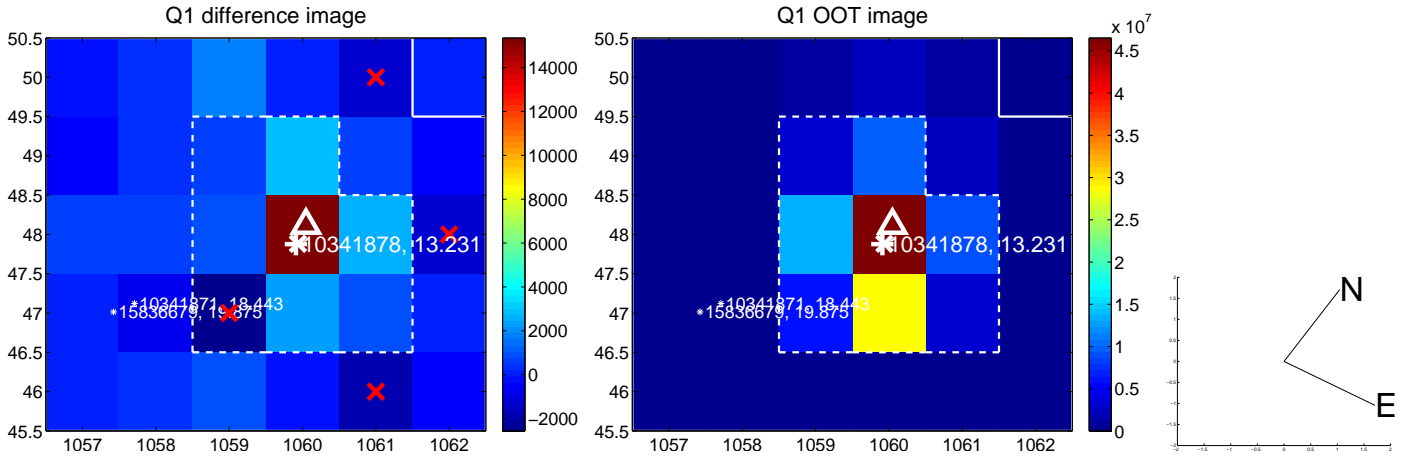
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.024 ± 0.108	0.22	-0.014 ± 0.106	0.019 ± 0.130
PRF-fit source offset from KIC position	0.047 ± 0.108	0.44	-0.046 ± 0.108	0.009 ± 0.095
photometric centroid source offset	0.95 ± 0.61	1.56	0.71 ± 0.63	-0.63 ± 0.57

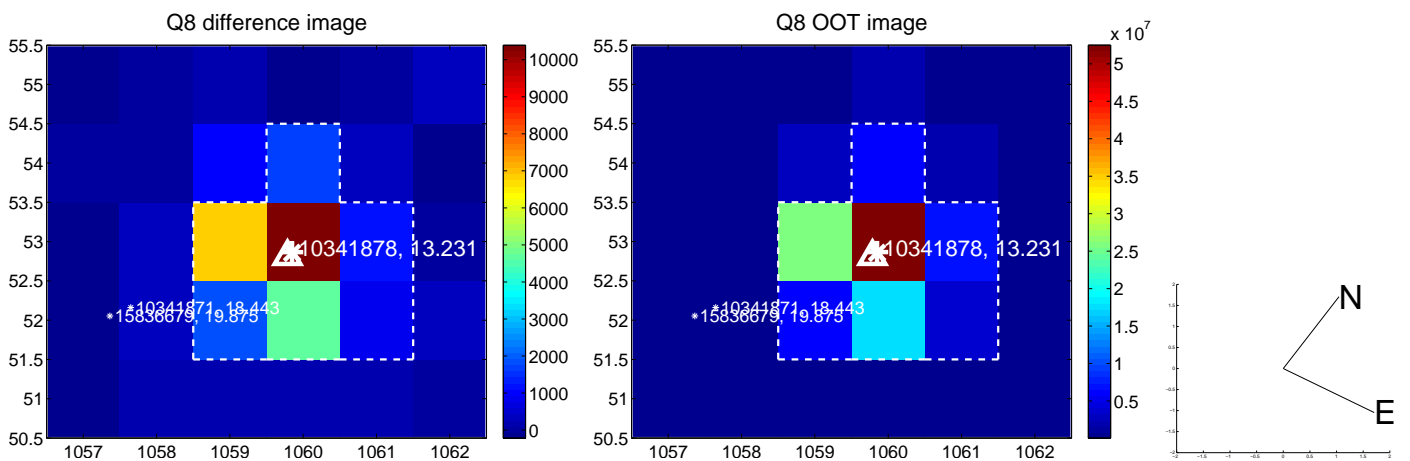
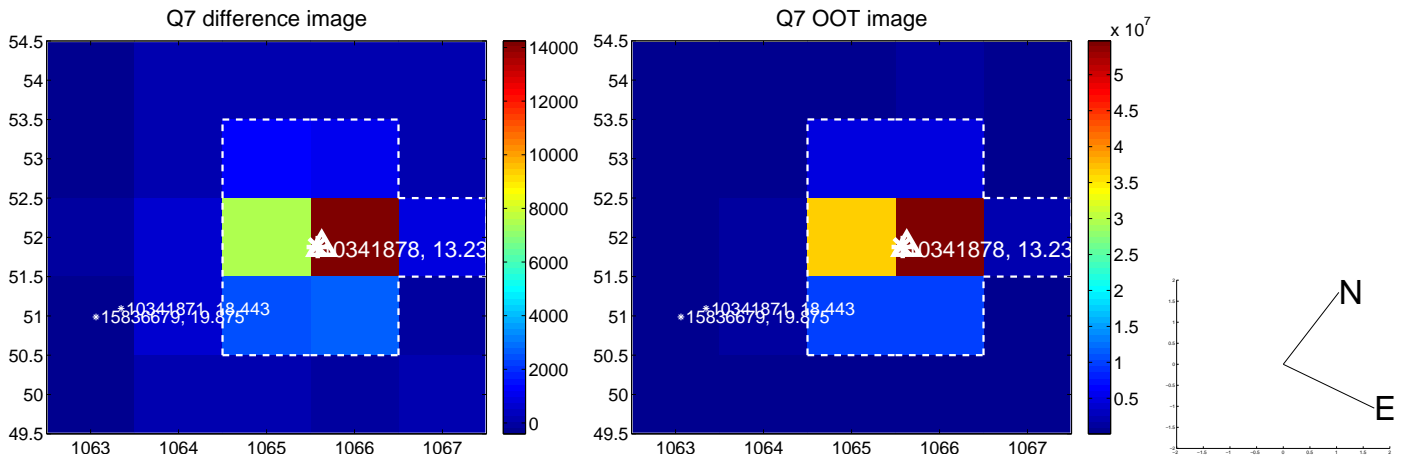
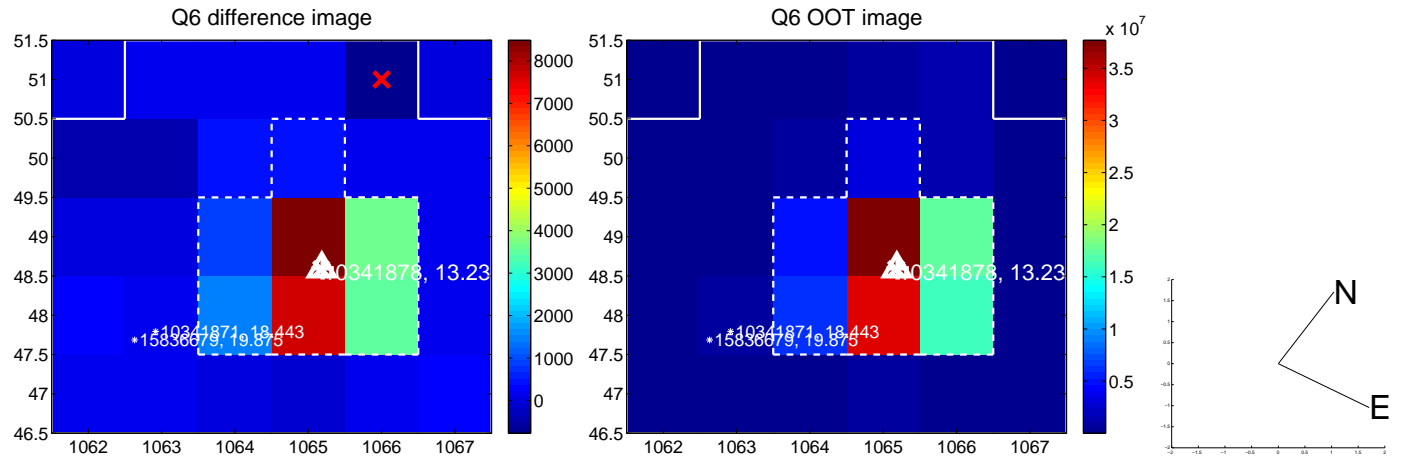
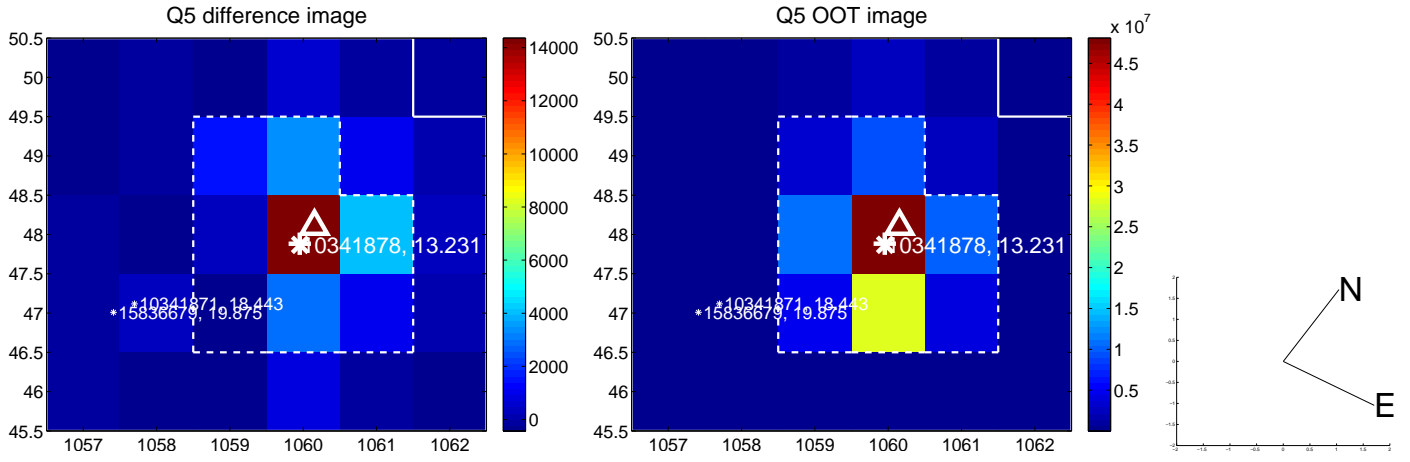


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

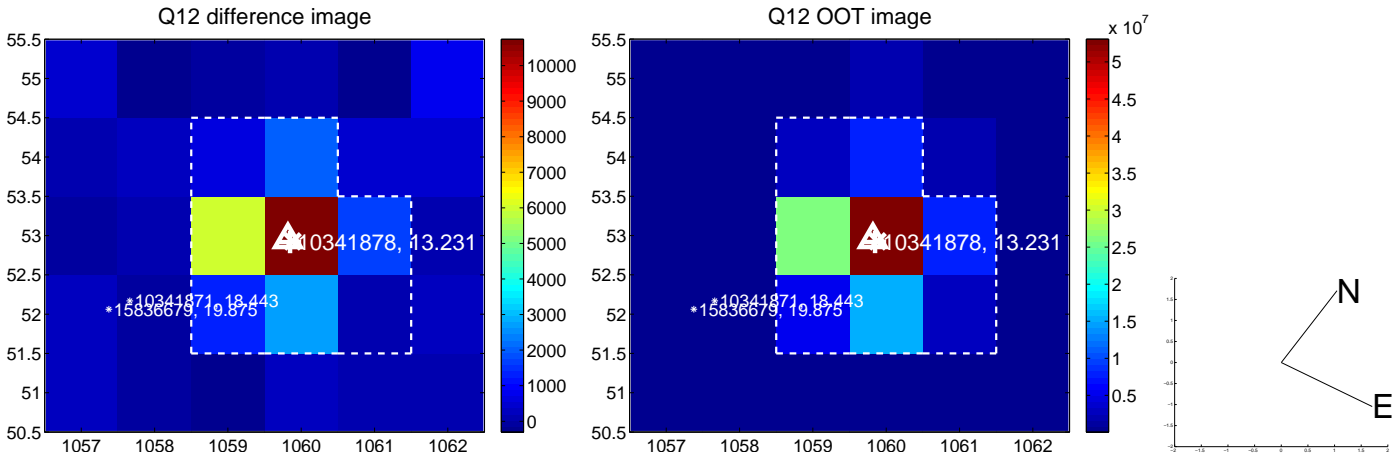
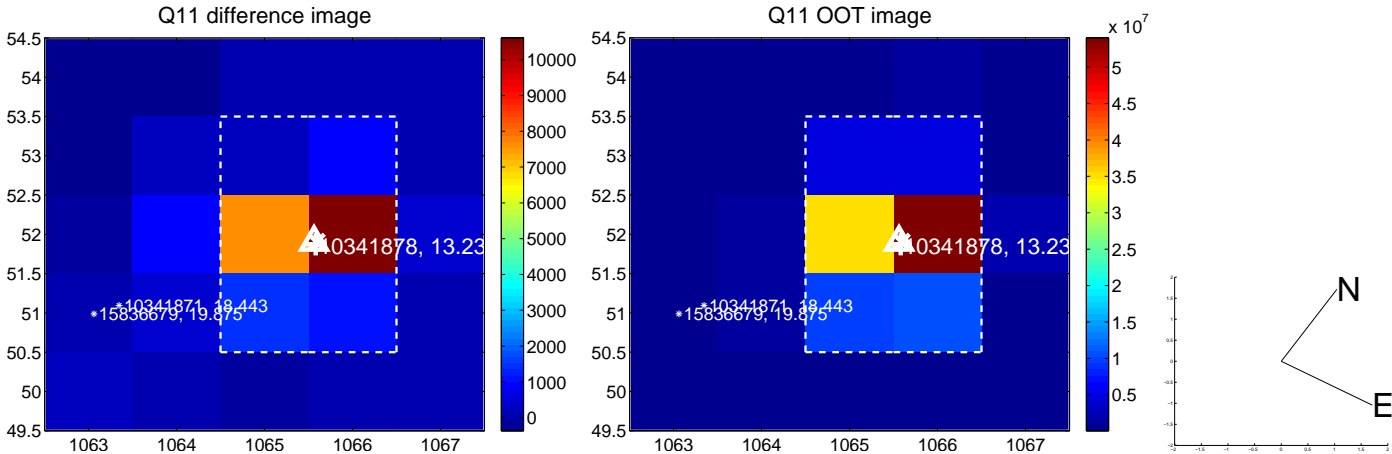
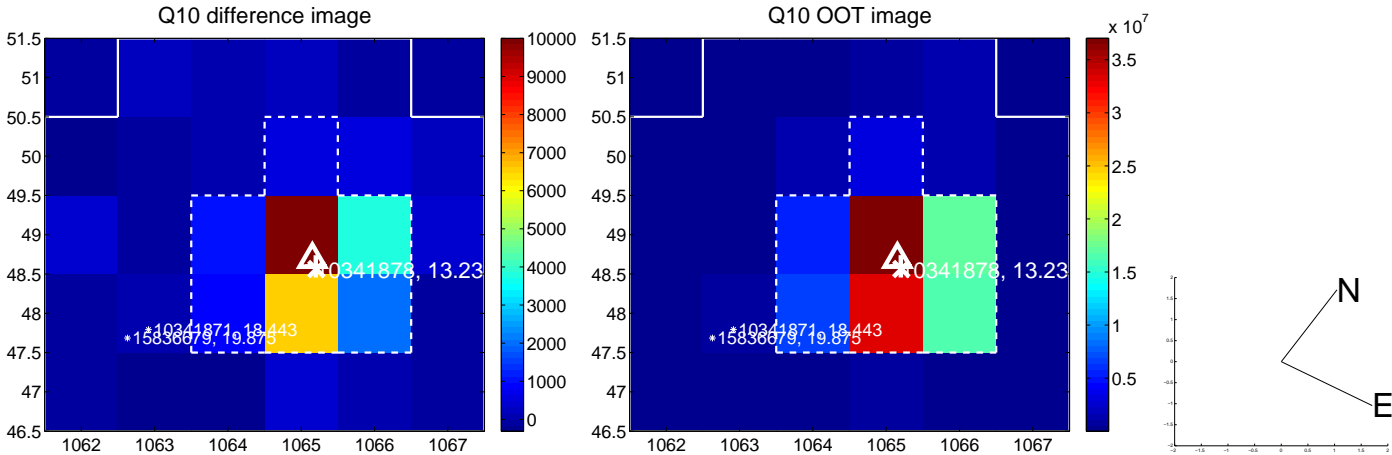
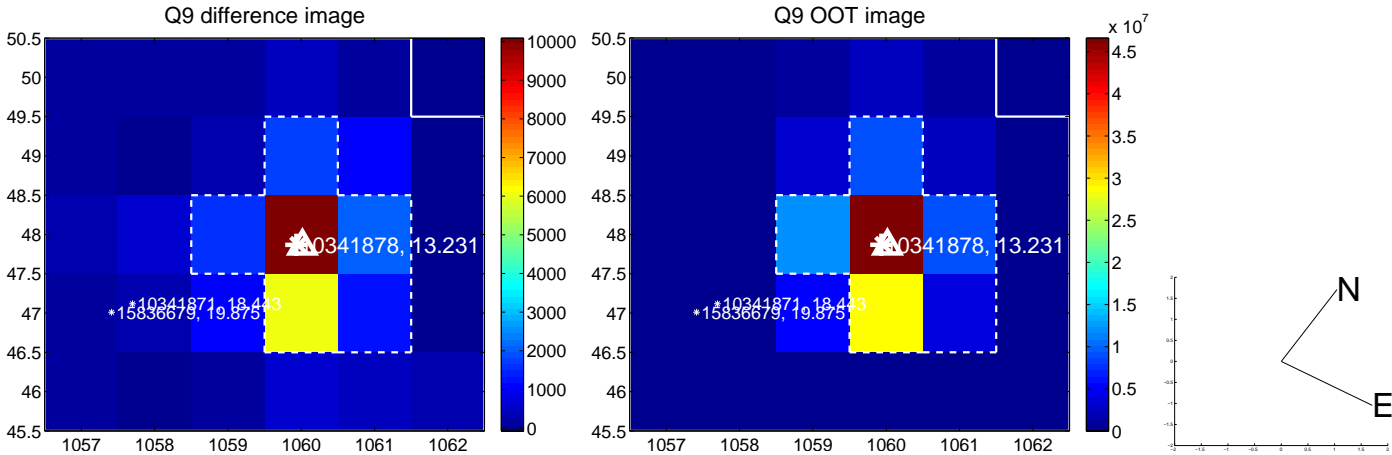
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



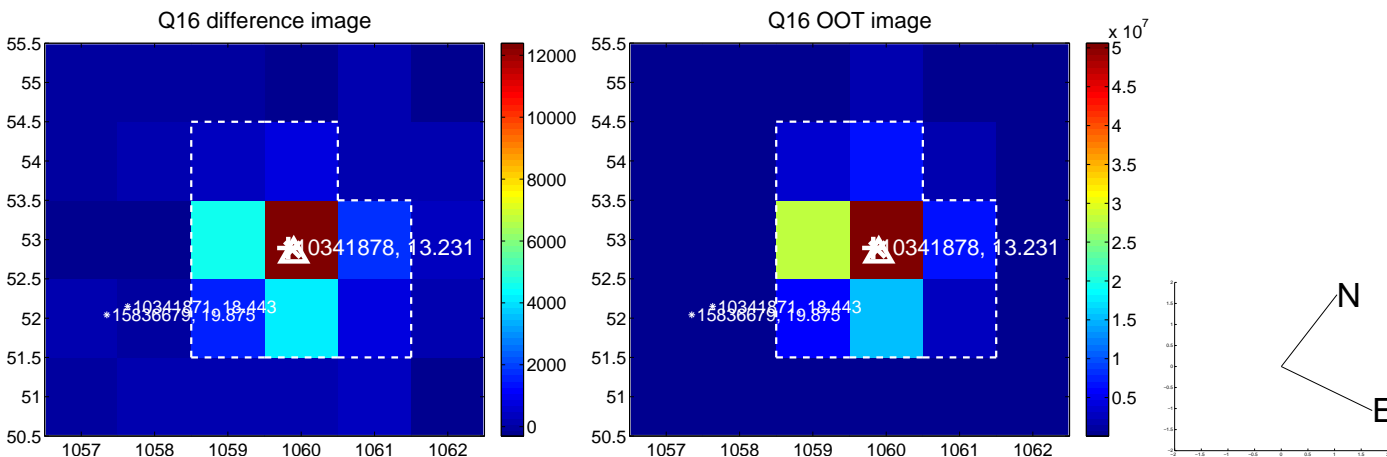
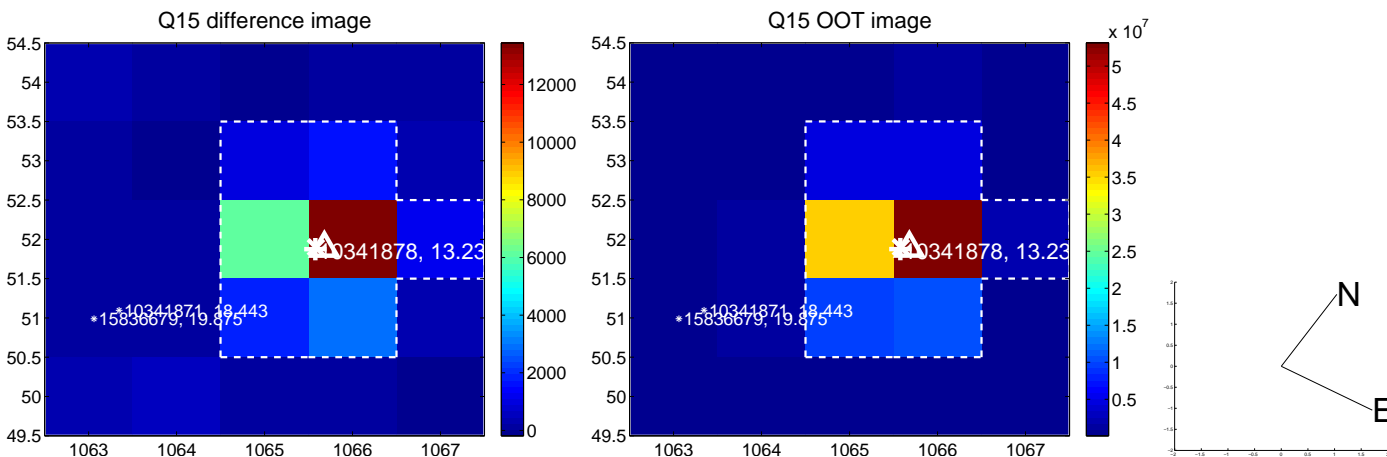
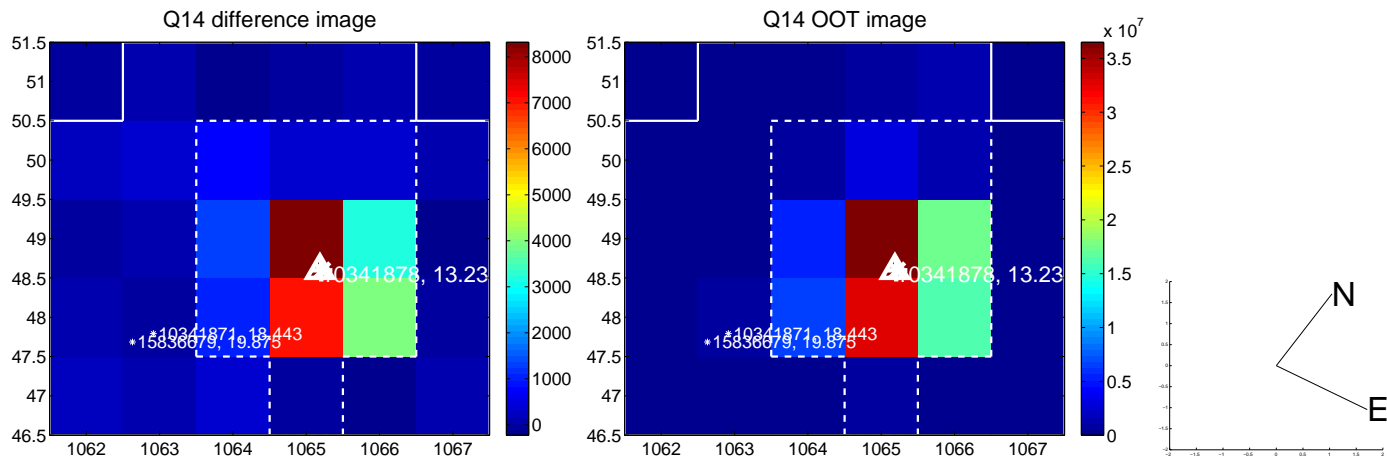
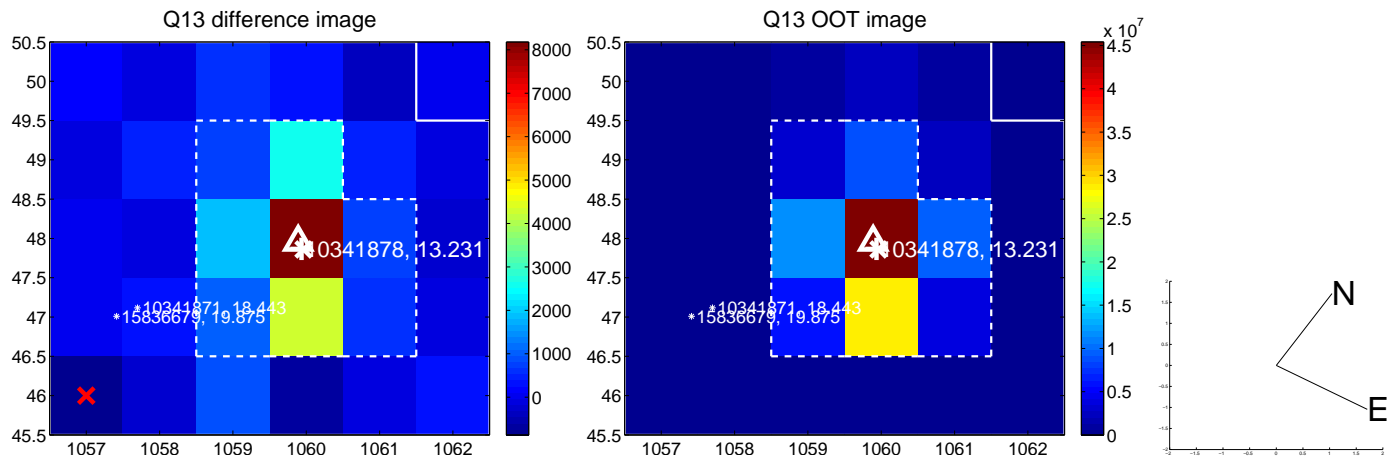
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



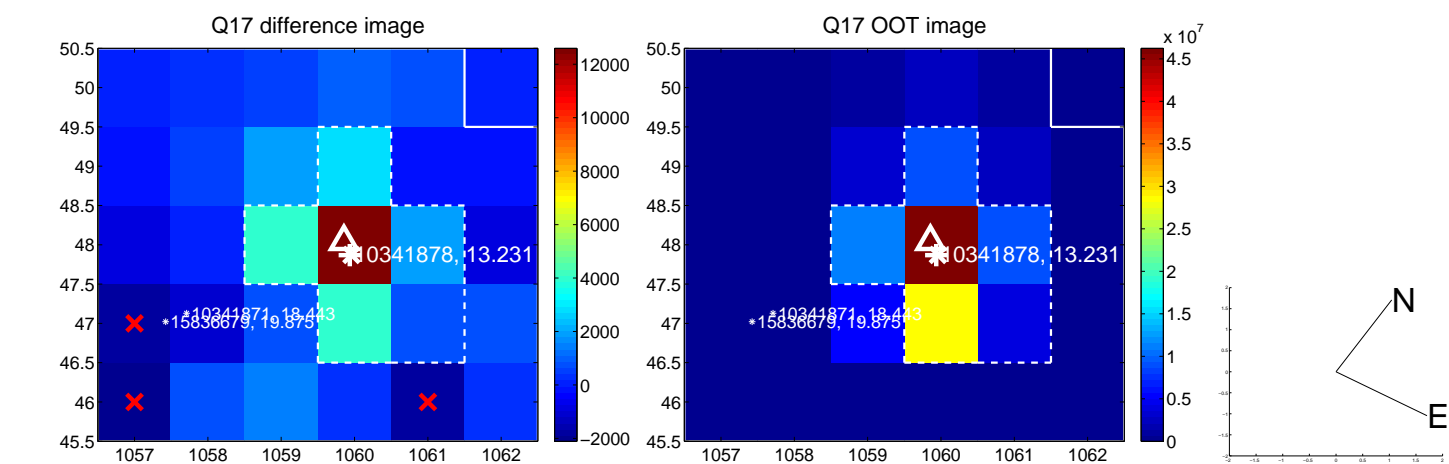
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



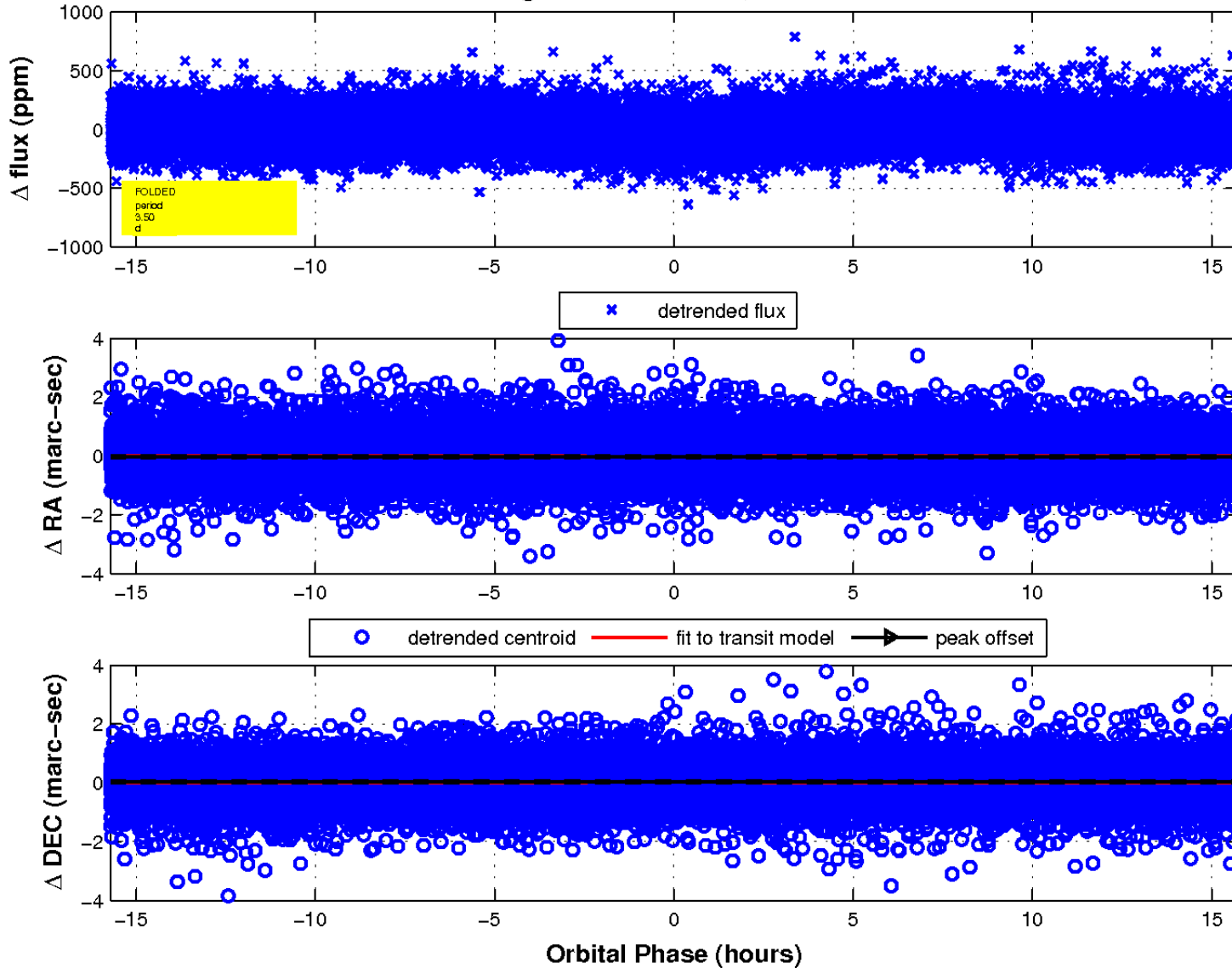
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

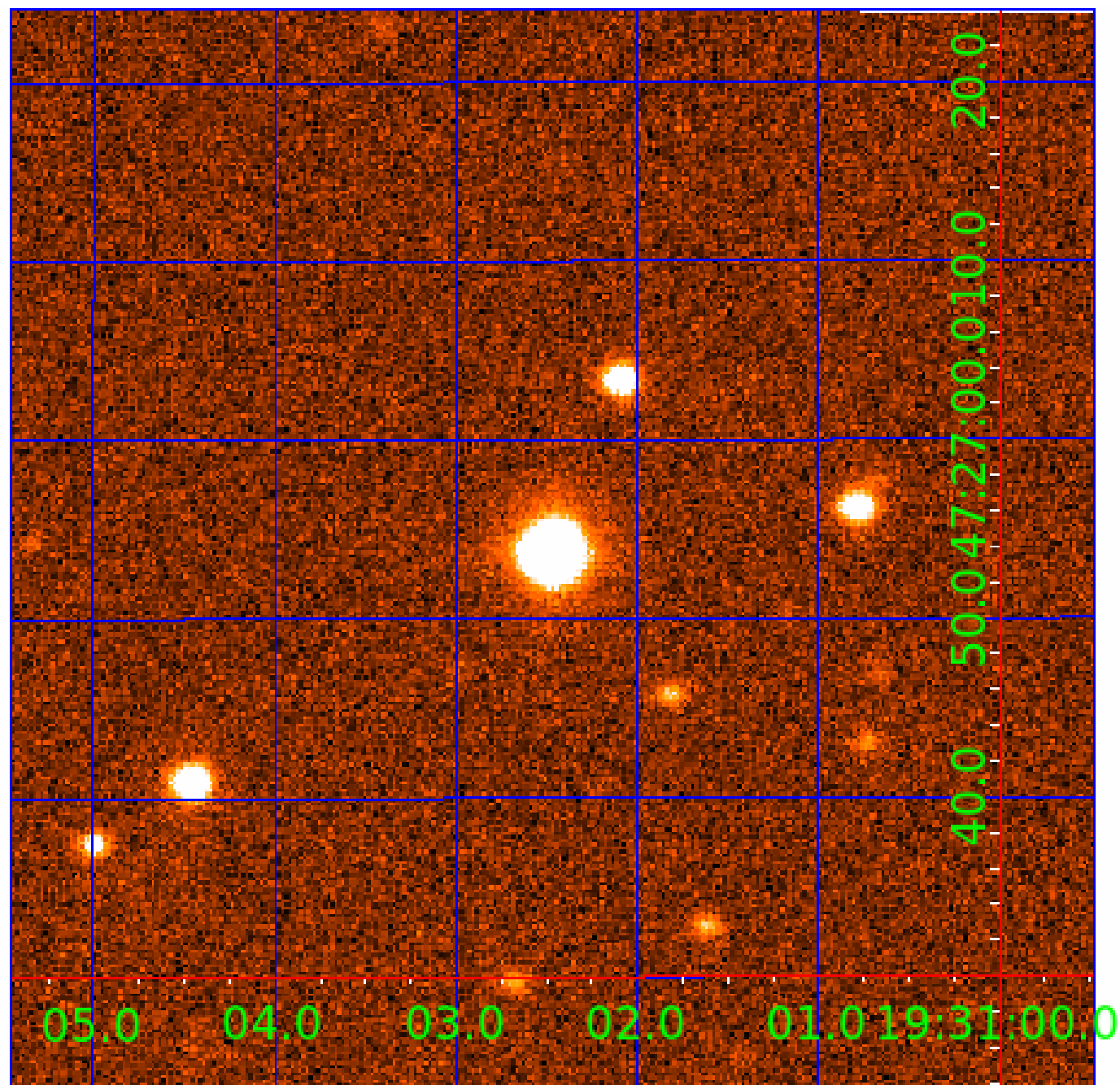


fluxWeightedCentroids, Planet 2 of 3



UKIRT Image

Declination



KIC 010341878

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})
010341878-01	OBS	6220.01	0.933675	131.568834	14.3	4.692	14.8	9.3	2.06	7286	0.85	22940.62
010341878-02	OBS	No	3.500398	132.132756	51.7	5.239	10.1	12.0	2.06	7286	1.76	3938.91
010341878-03	OBS	No	310.989450	278.382853	157.7	6.933	7.4	7.0	2.06	7286	2.93	9.94

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010341878-01	OBS	FP	0.00	0	0	0	1	EPHEM_MATCH
010341878-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—TRANS_GAPPED—SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT
010341878-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS

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

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

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

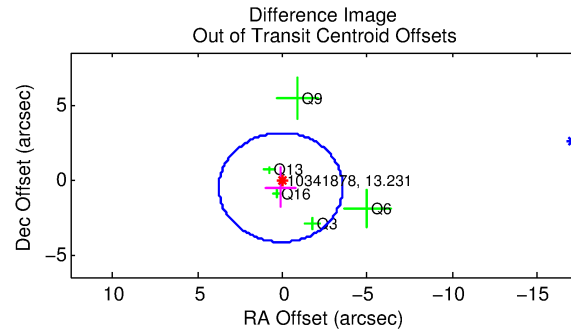
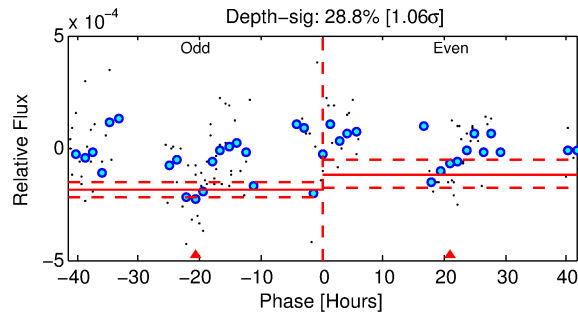
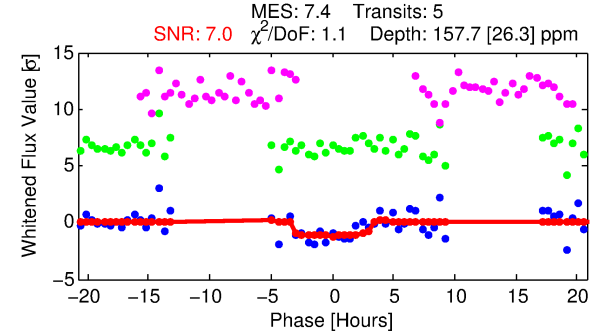
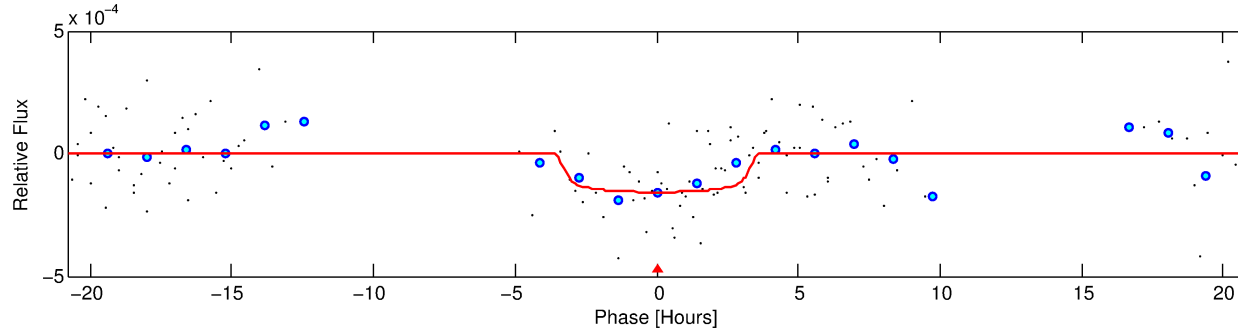
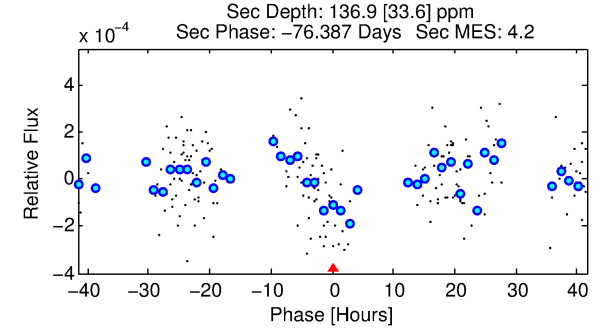
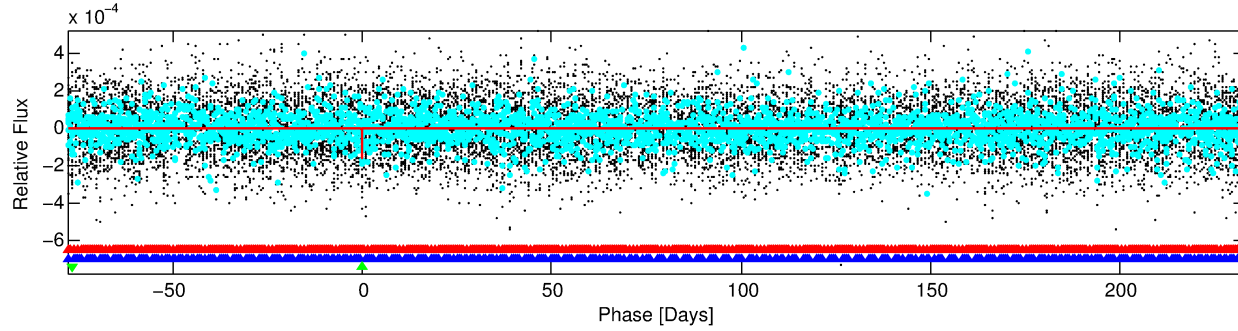
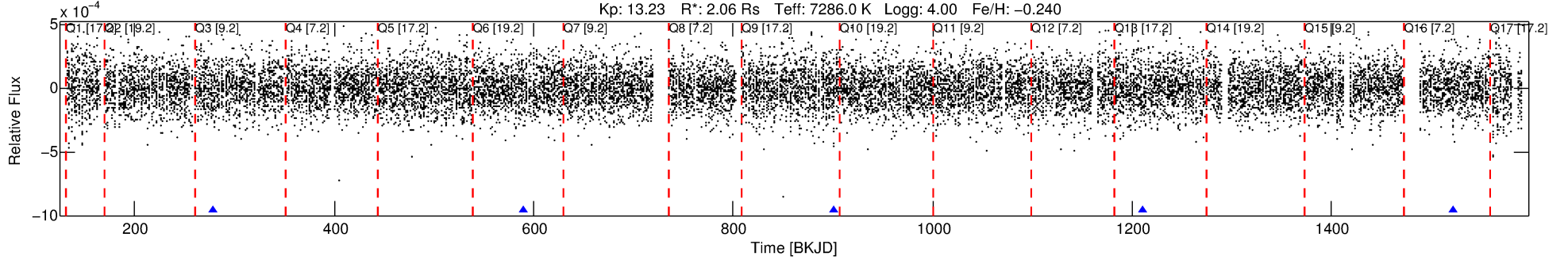
Ephemeris Match Information For 010341878-03

No Significant Match Found

DV One-Page Summary

KIC: 10341878 Candidate: 3 of 3 Period: 310.989 d
KOI: K06220 Corr: No Ephemeris Match

Kp: 13.23 R*: 2.06 Rs Teff: 7286.0 K Logg: 4.00 Fe/H: -0.240



DV Fit Results:

Period = 310.98945 [0.01002] d
Epoch = 278.3829 [0.0295] BKJD
Rp/R* = 0.0131 [0.0061]
a/R* = 181.19 [513.82]
b = 0.86 [0.83]
Seff = 9.94 [4.68]
Teq = 453 [53] K
Rp = 2.93 [1.66] Re
a = 1.0364 [0.2971] AU
Ag = 9429.83 [9935.72] [0.95σ]
Teffp = 6898 [1684] K [3.82σ]

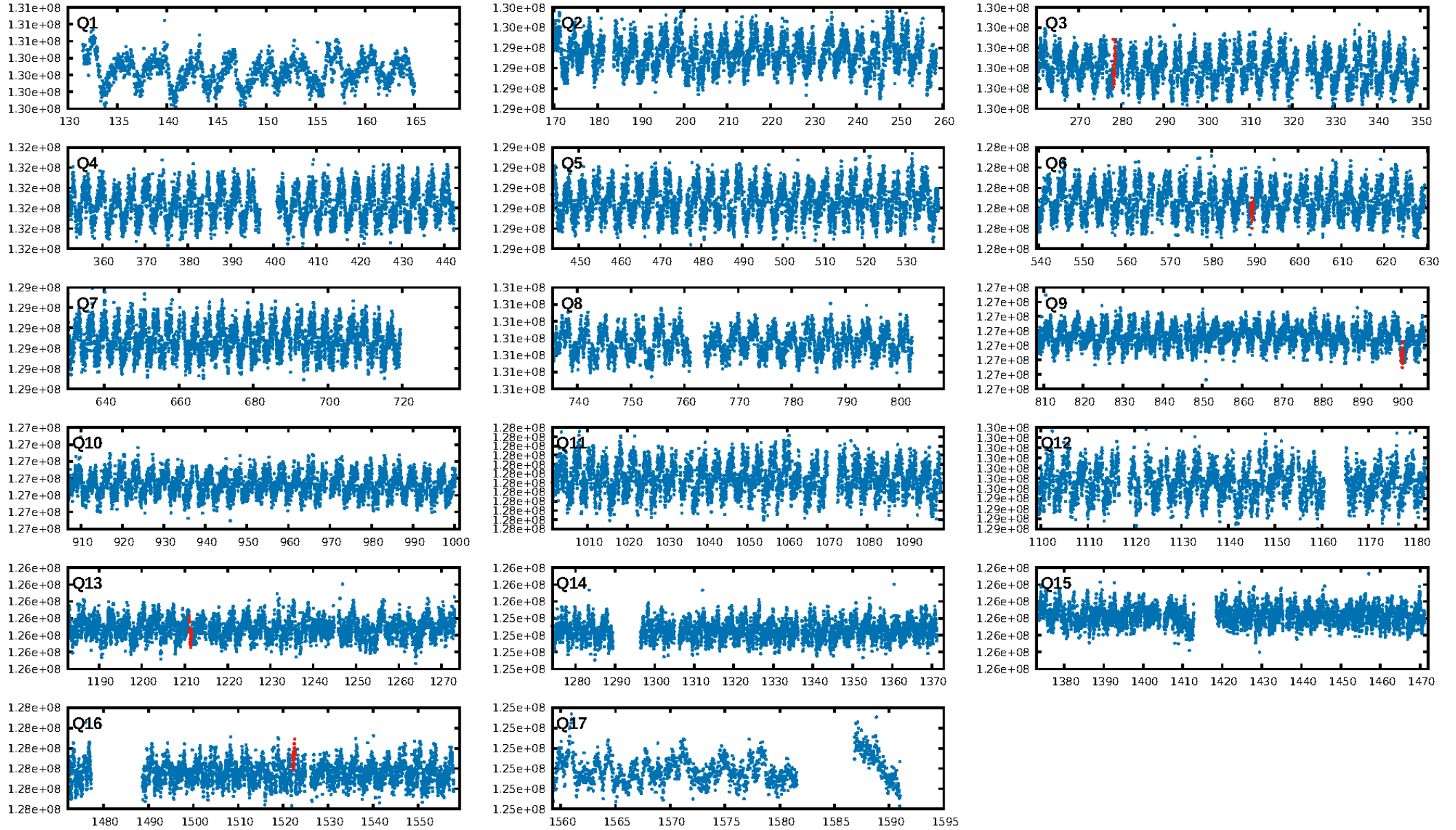
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [849.22σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 9.7%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.45e-08
RollingBand-fgt: 1.00 [5/5]
GhostDiagnostic-chr: 3.62
Centroid-sig: 62.2%
Centroid-so: 0.832 arcsec [0.55σ]
OotOffset-rm: 0.532 arcsec [0.44σ]
KicOffset-rm: 0.567 arcsec [0.60σ]
OotOffset-st: 1/1/1/2 [5]
KicOffset-st: 1/1/1/2 [5]
DiffImageQuality-fgm: 0.40 [2/5]
DiffImageOverlap-fno: 0.00 [0/5]

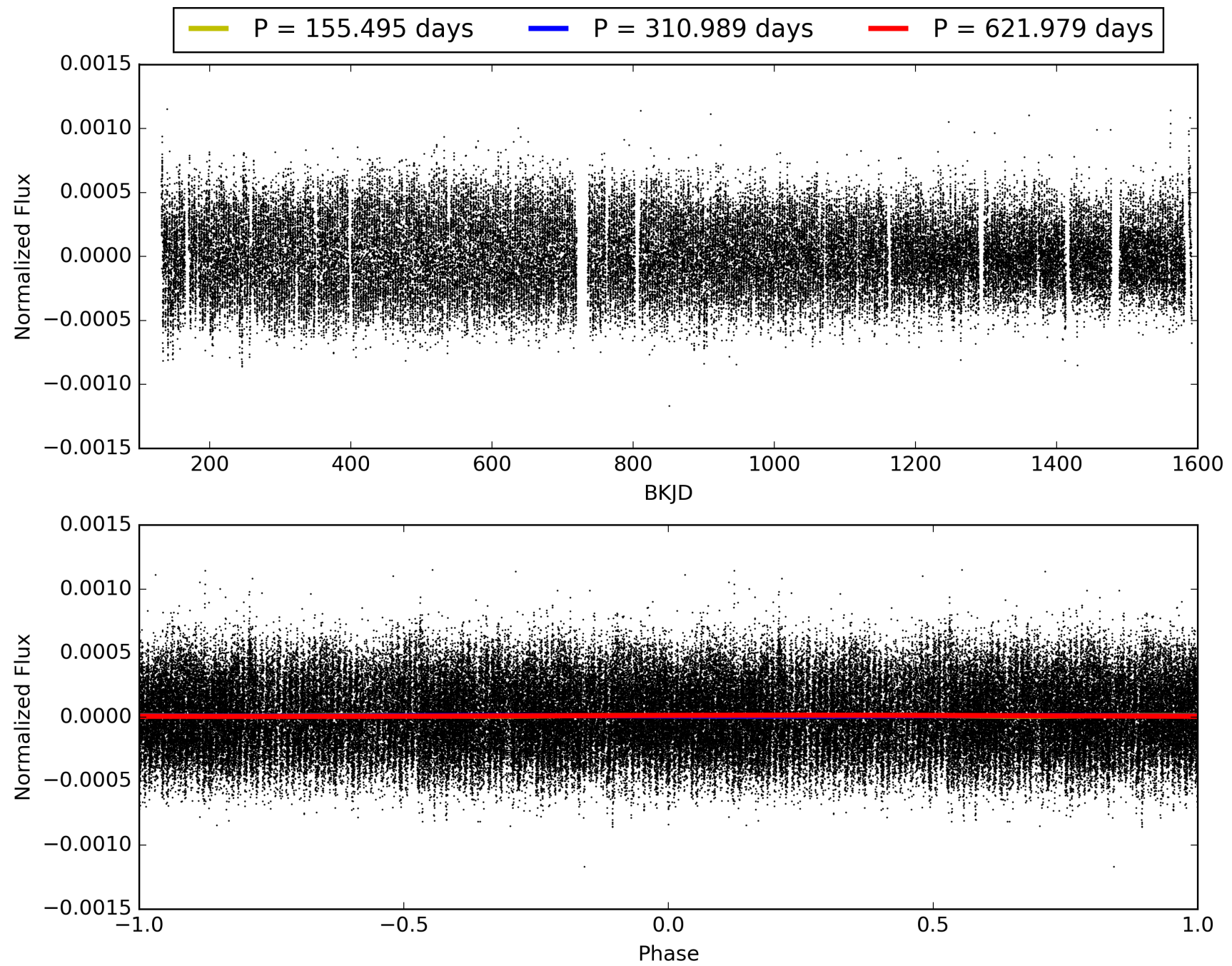
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 10:06:50 Z

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

TCE 010341878-03, PDC Light Curves

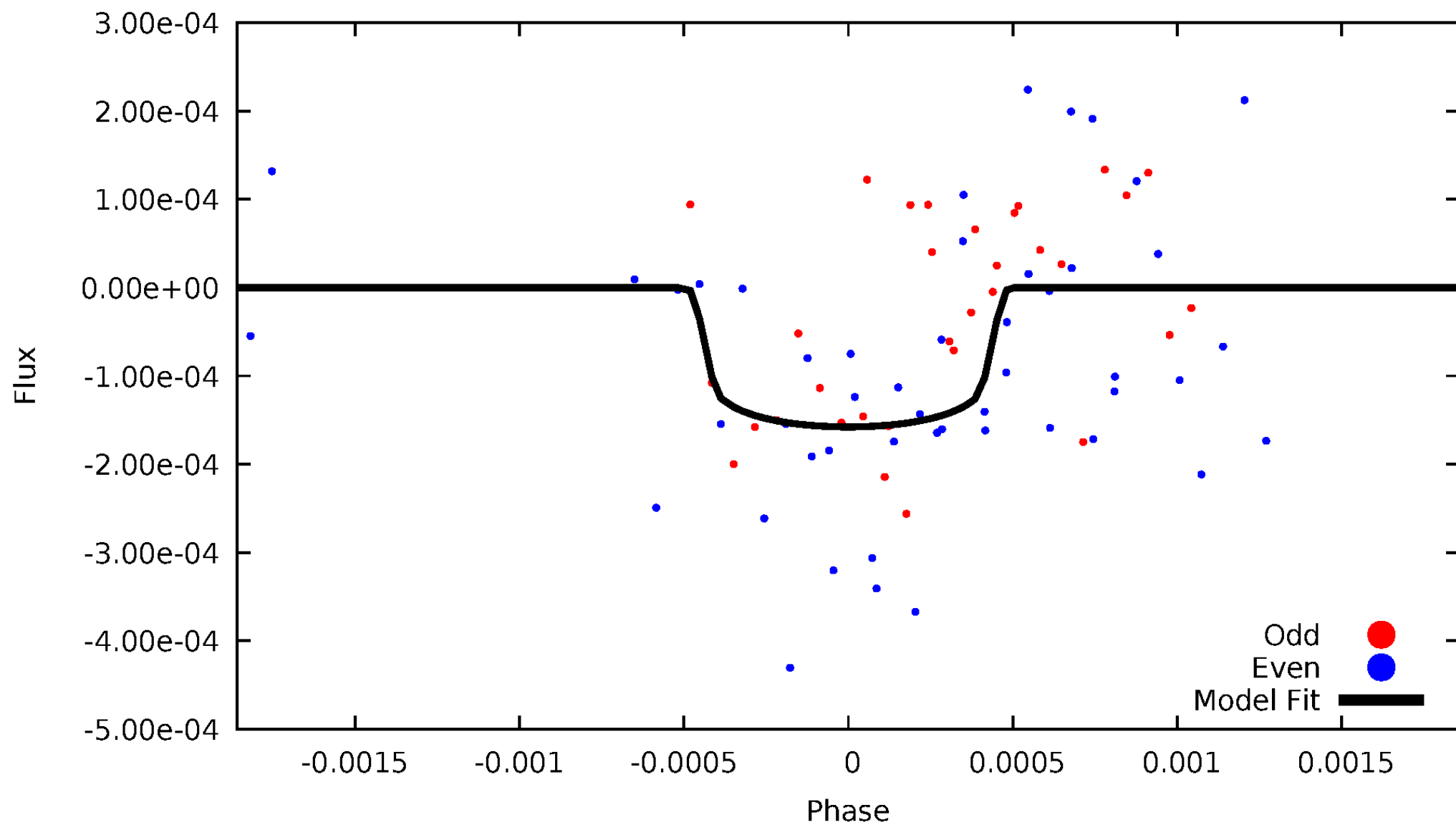


TCE 010341878-03



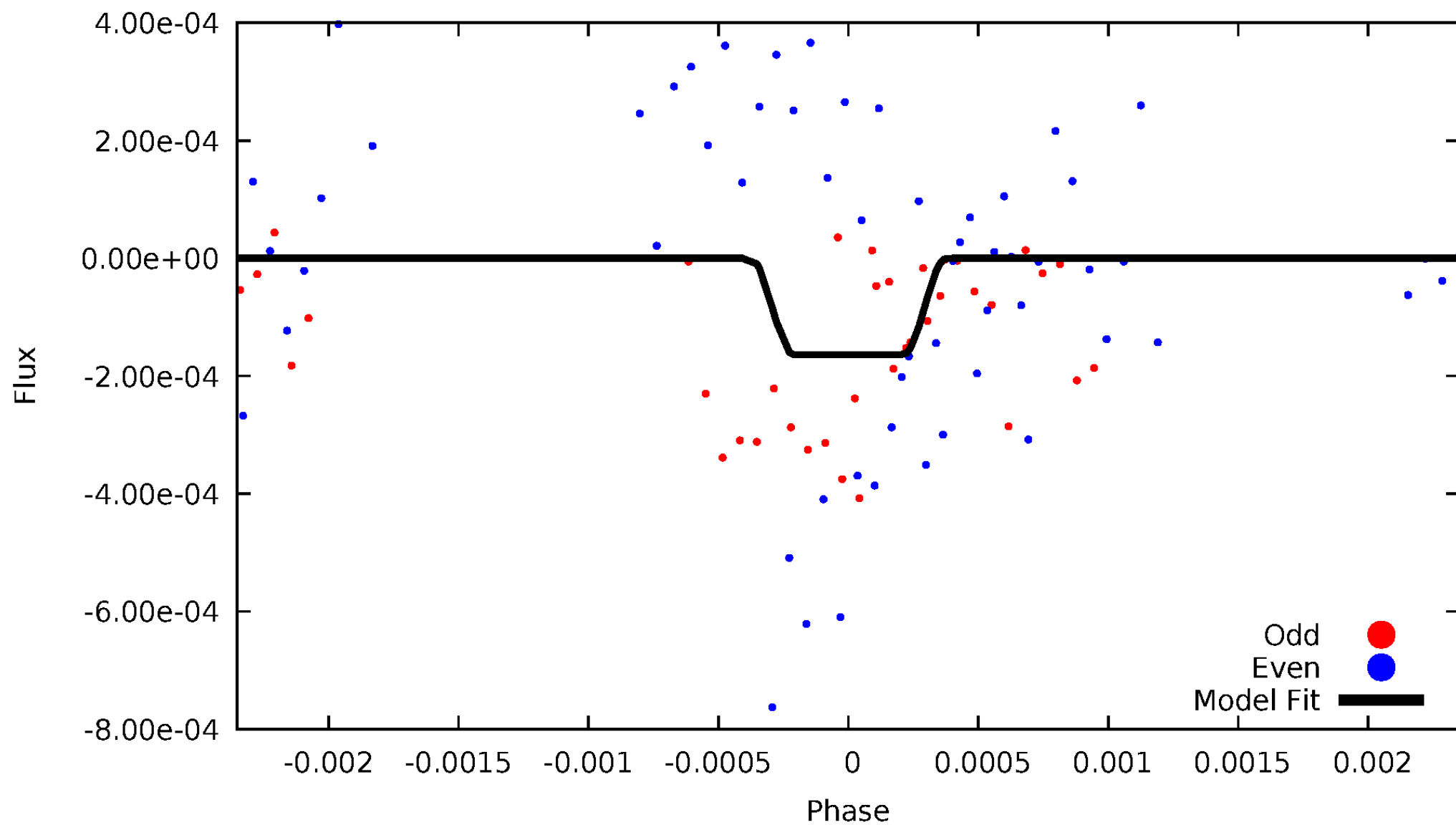
DV Odd/Even

TCE 010341878-03

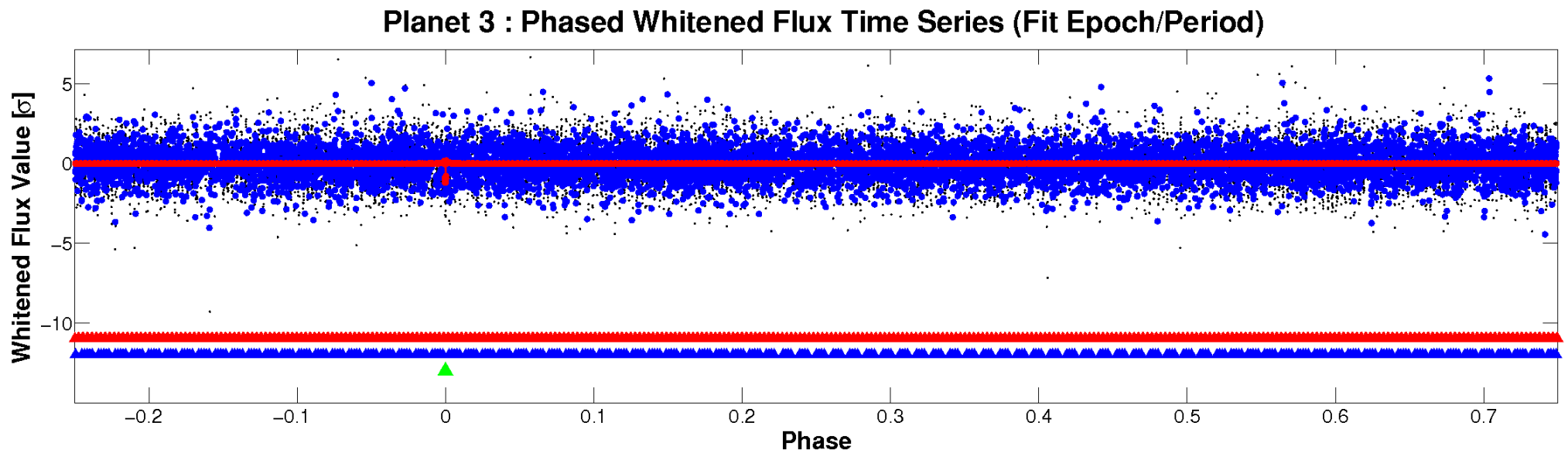
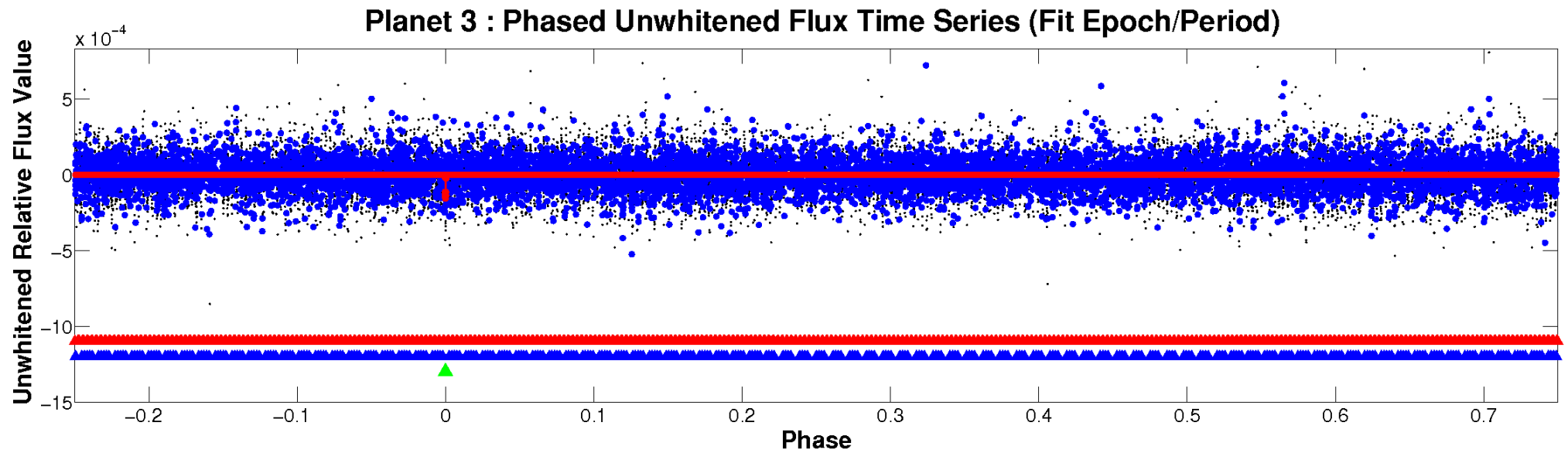


ALT Odd/Even

TCE 010341878-03

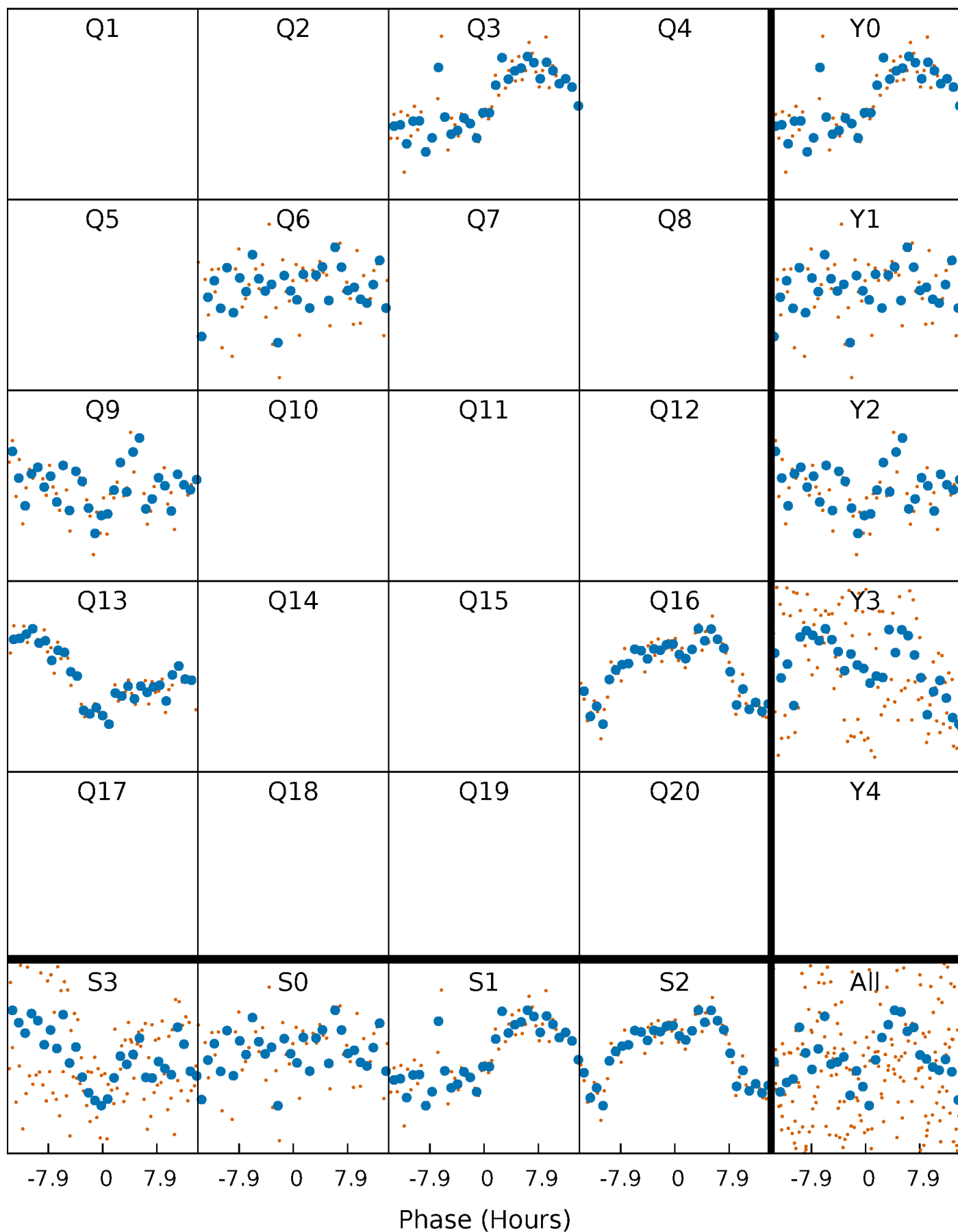


Non-Whitened Vs. Whitened Light Curve



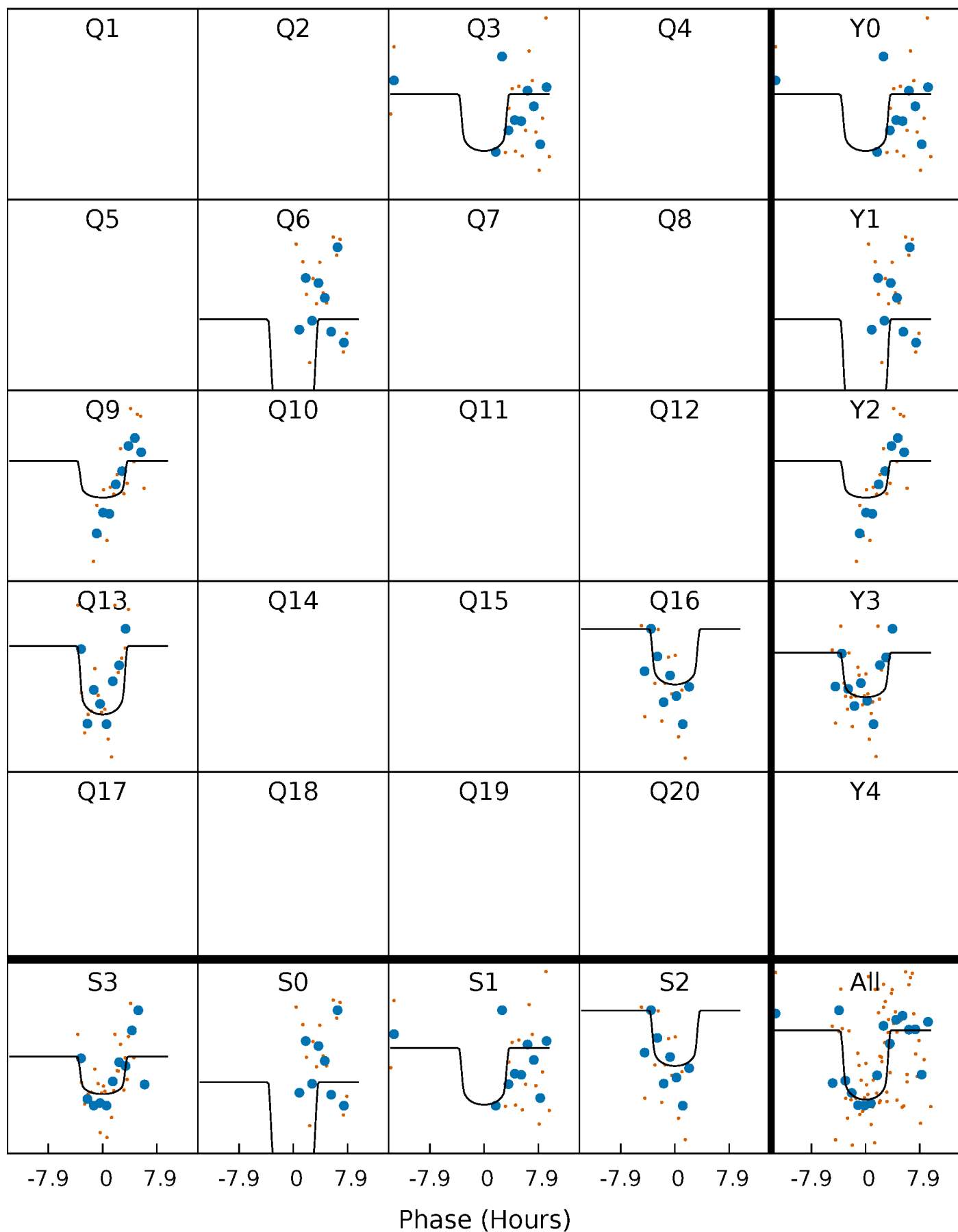
PDC Quarter-Phased Transit Curves

TCE 010341878-03 $P=310.989450$ Days $T_0=278.382853$ (BKJD)



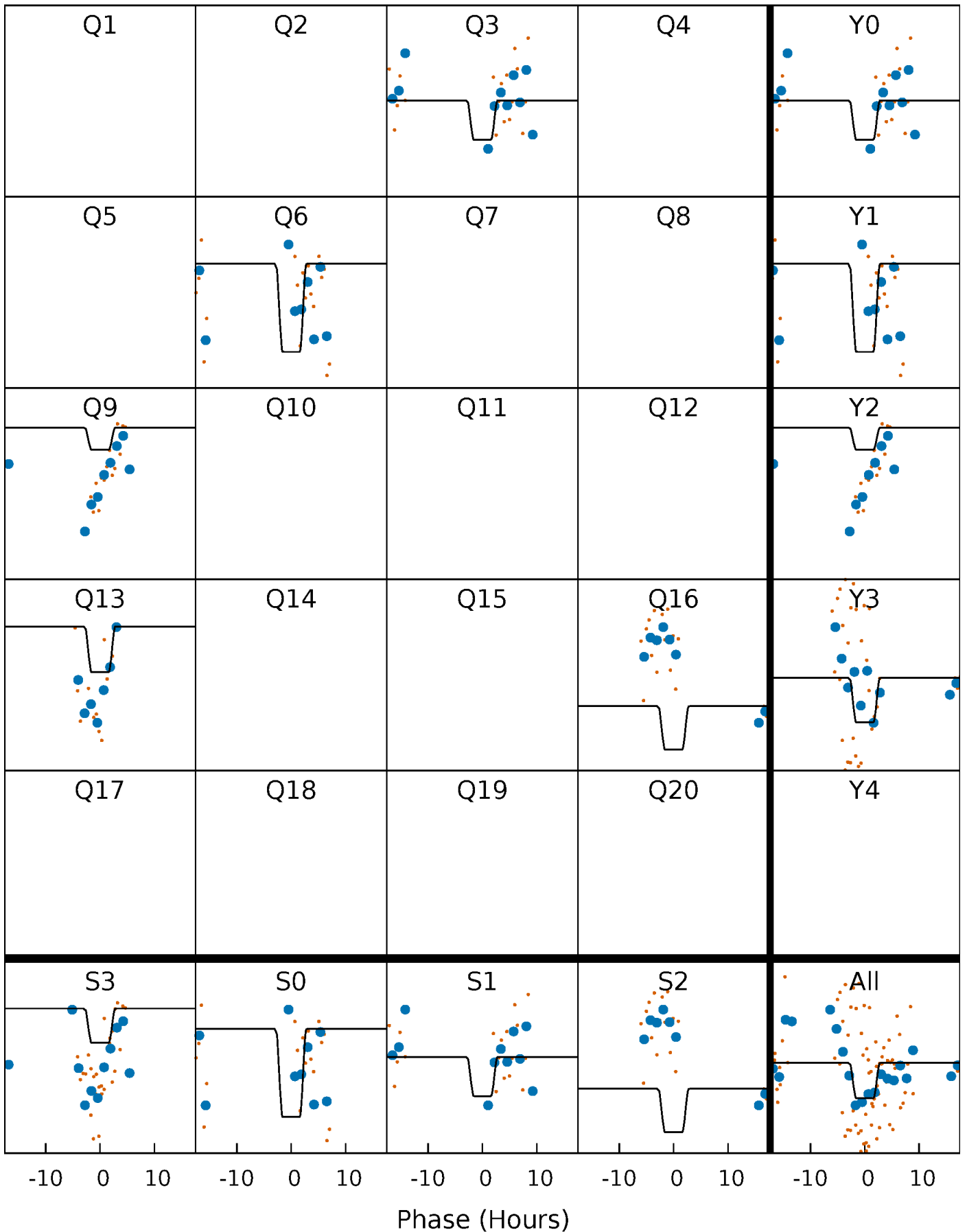
DV Quarter-Phased Transit Curves

TCE 010341878-03 P=310.989450 Days $T_0=278.382853$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

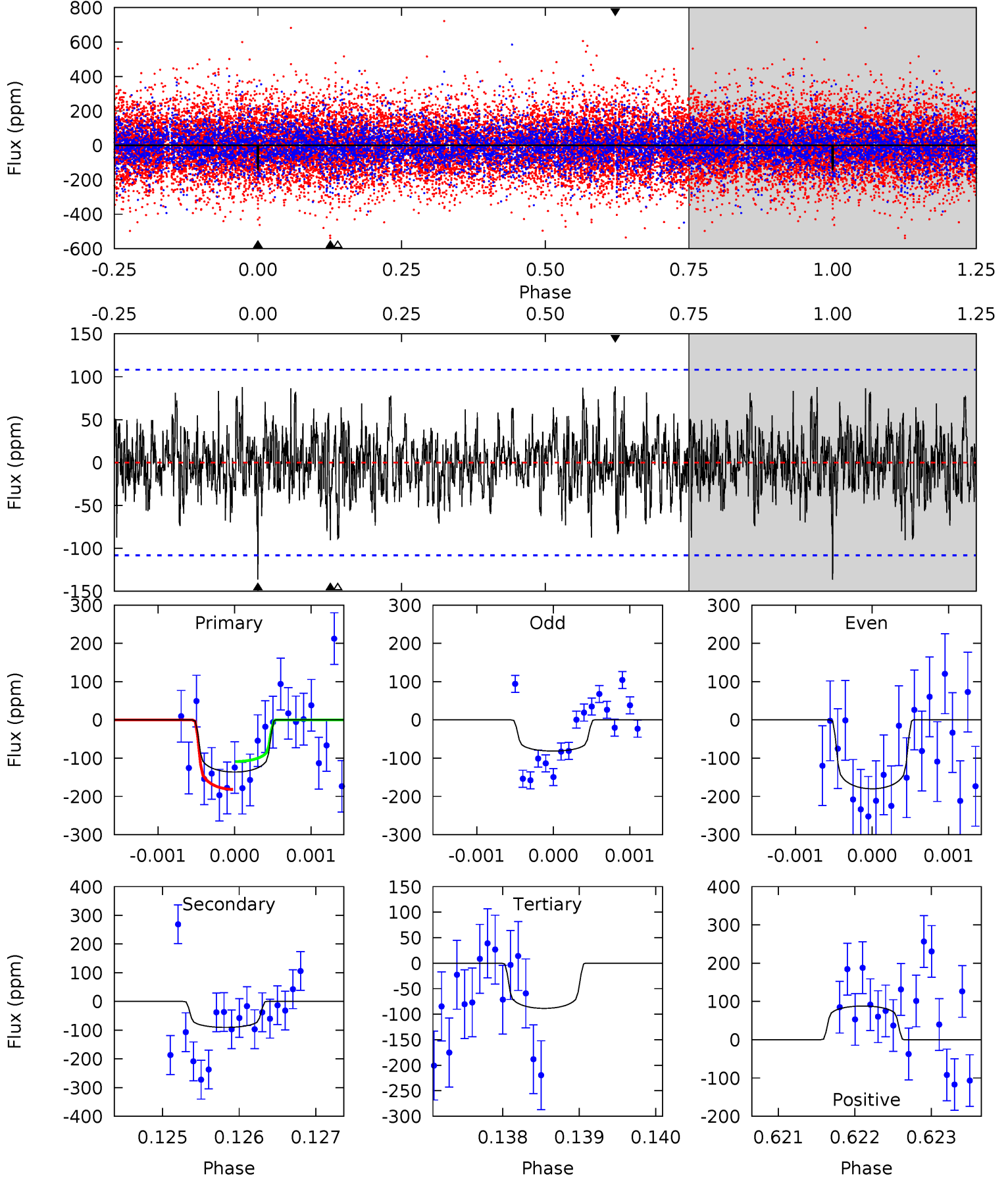
TCE 010341878-03 $P=310.995155$ Days $T_0=278.407488$ (BKJD)



DV Model-Shift Uniqueness Test

010341878-03, P = 310.989450 Days, E = 278.382853 Days

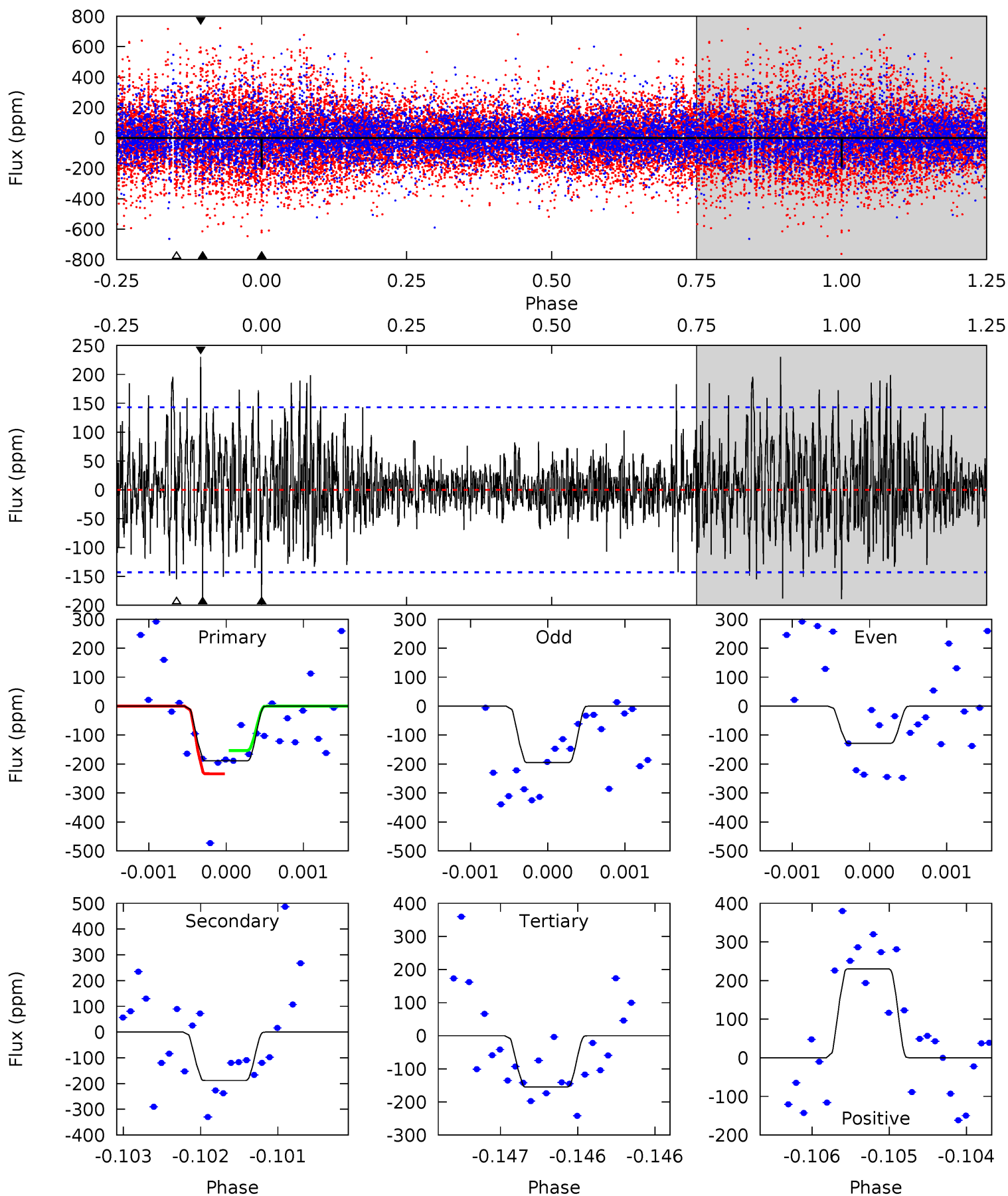
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.89	4.57	4.48	4.45	5.46	3.31	1.38	2.41	2.44	0.09	0.12	2.50	0.90	0.39	1.75



Alt Model-Shift Uniqueness Test

010341878-03, P = 310.995155 Days, E = 278.407488 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.29	7.24	5.96	8.86	5.50	3.37	1.88	1.33	-1.57	1.28	-1.62	1.27	1.34	0.55	1.51



Stellar Parameters For KIC 010341878

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	7286^{+228}_{-330}	$3.998^{+0.246}_{-0.164}$	$-0.240^{+0.250}_{-0.350}$	$2.056^{+0.544}_{-0.665}$	$1.532^{+0.224}_{-0.298}$	$0.248^{+0.412}_{-0.110}$
	+3%/-5%	+6%/-4%	+104%/-146%	+26%/-32%	+15%/-19%	+166%/-44%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 010341878-03 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-90 ± 20	$2.89^{+1.49}_{-1.25}$	627^{+54}_{-53}	6041^{+2306}_{-1029}	5999^{+15472}_{-3301}
Alt.	-188 ± 26	$2.81^{+1.35}_{-1.32}$	623^{+52}_{-51}	7495^{+3975}_{-1393}	13954^{+33863}_{-7607}

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

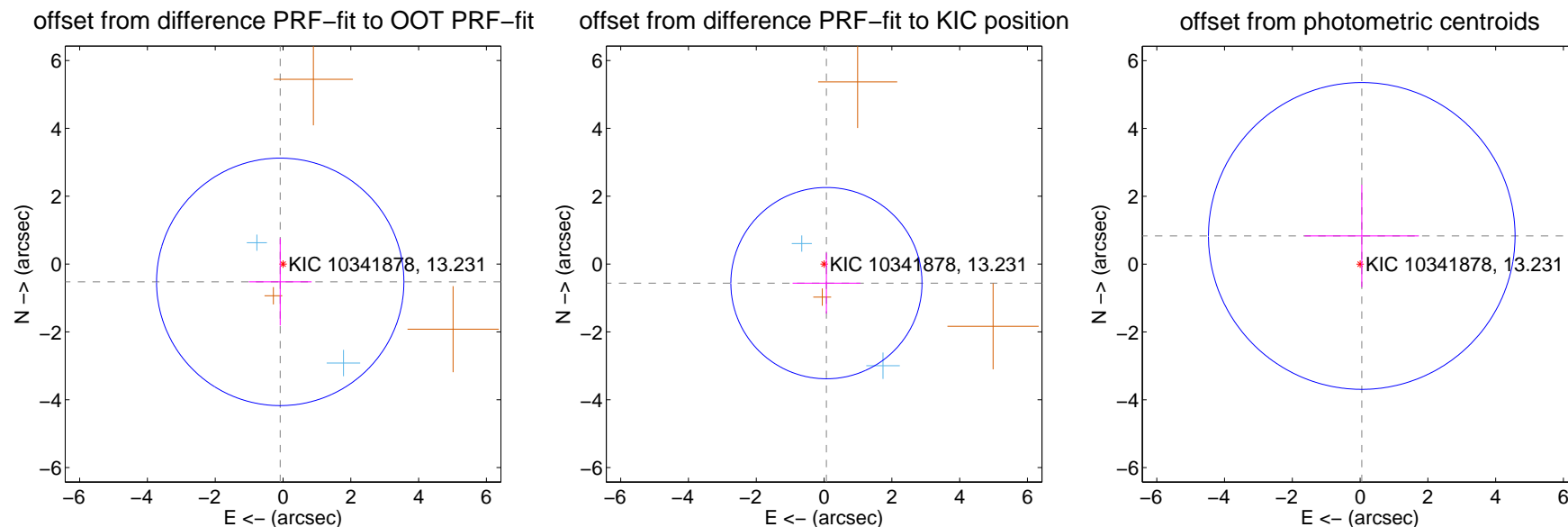
DV Centroid Data

Supplemental centroid analysis for 010341878-03. Kepler magnitude: 13.23. Transit SNR 7.02

There are 2 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.23 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.532 ± 1.216	0.44	0.083 ± 0.926	-0.525 ± 1.285
PRF-fit source offset from KIC position	0.567 ± 0.940	0.60	-0.069 ± 0.999	-0.563 ± 0.897
photometric centroid source offset	0.83 ± 1.51	0.55	-0.05 ± 1.69	0.83 ± 1.51



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

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

Q1 no difference image



Q1 no OOT image



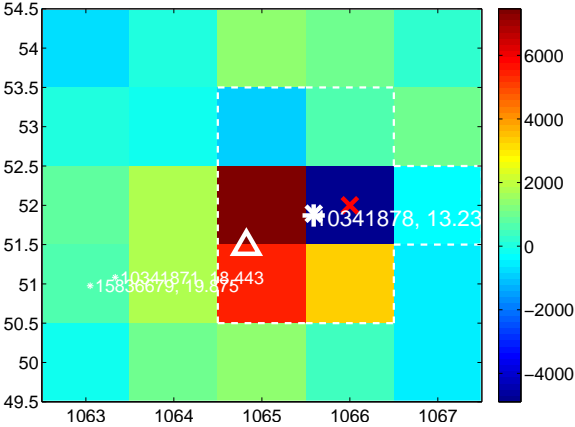
Q2 no difference image



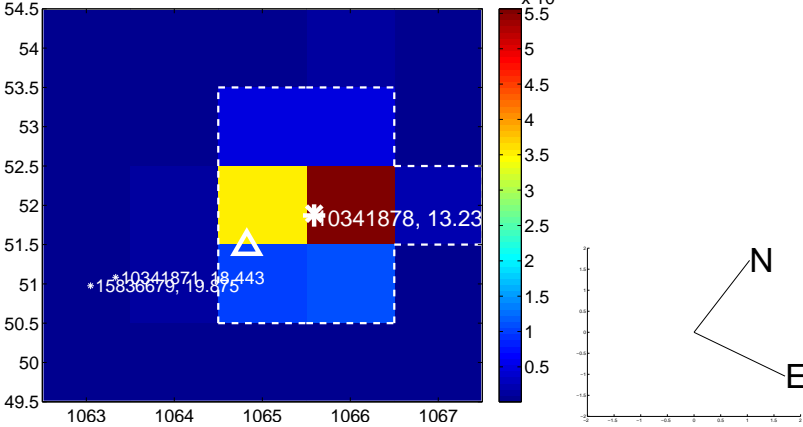
Q2 no OOT image



Q3 difference image



Q3 OOT image



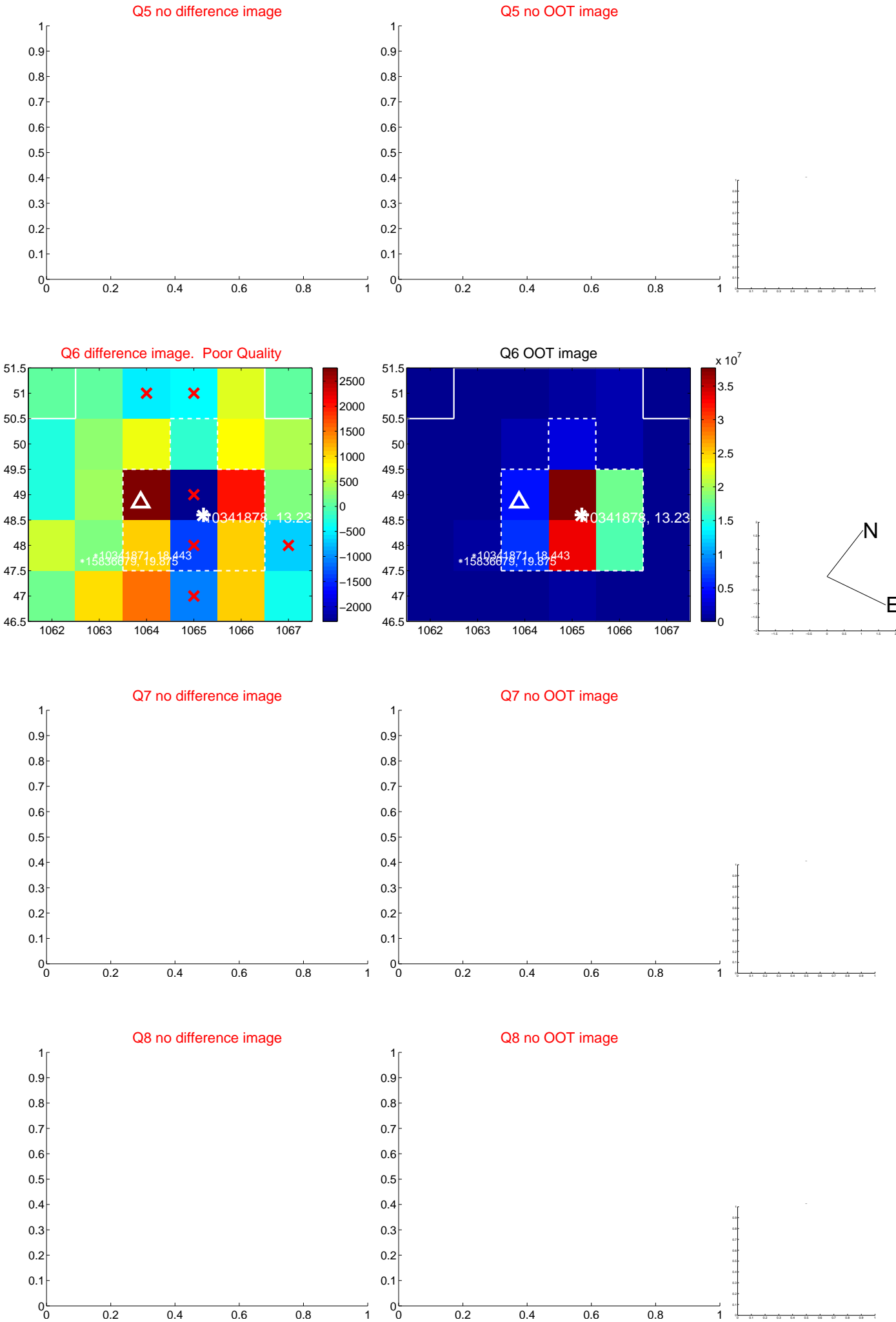
Q4 no difference image



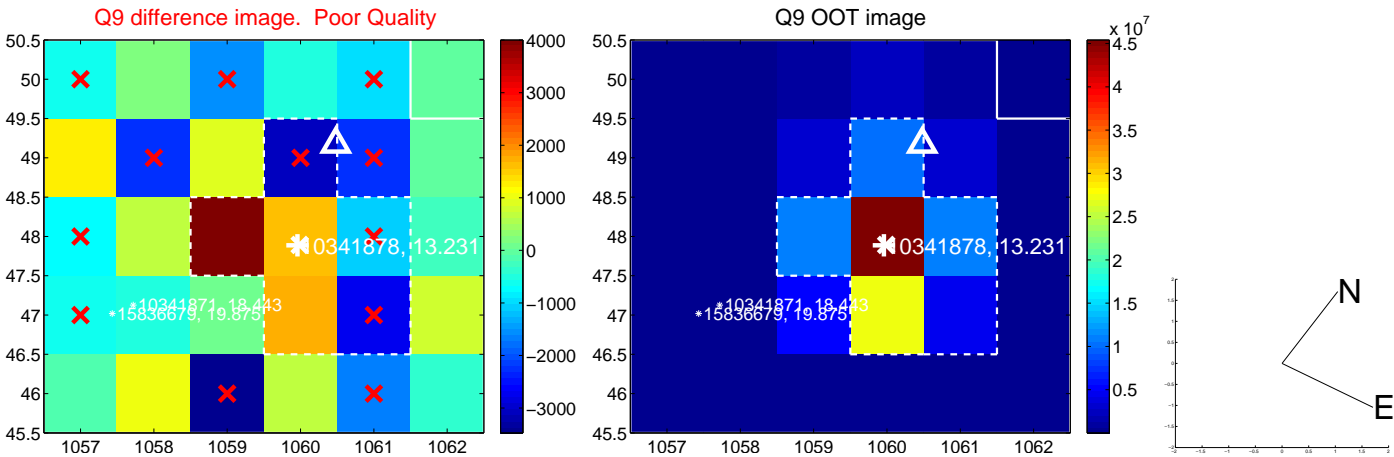
Q4 no OOT image



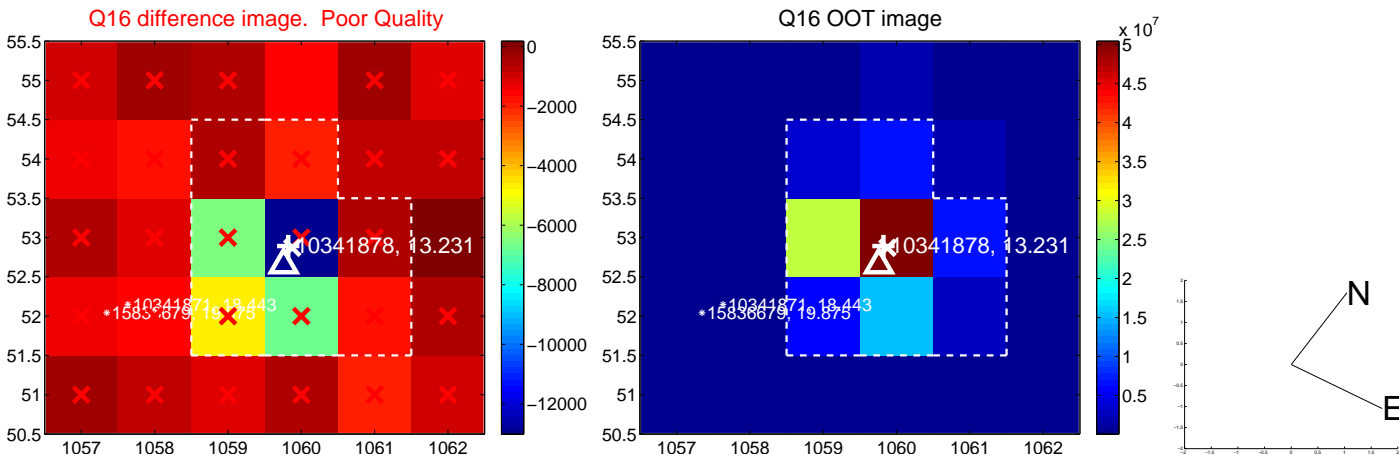
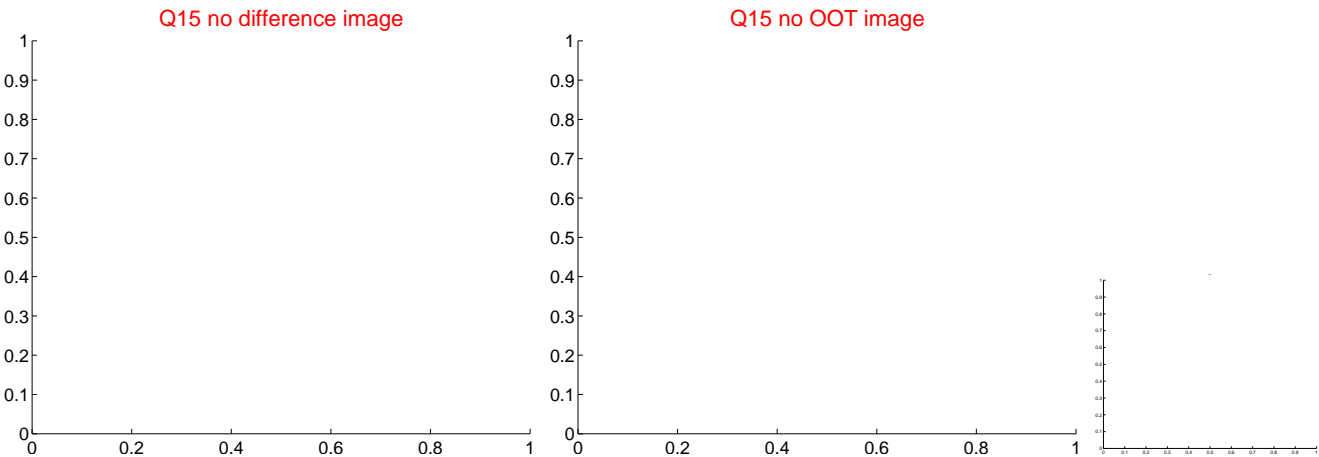
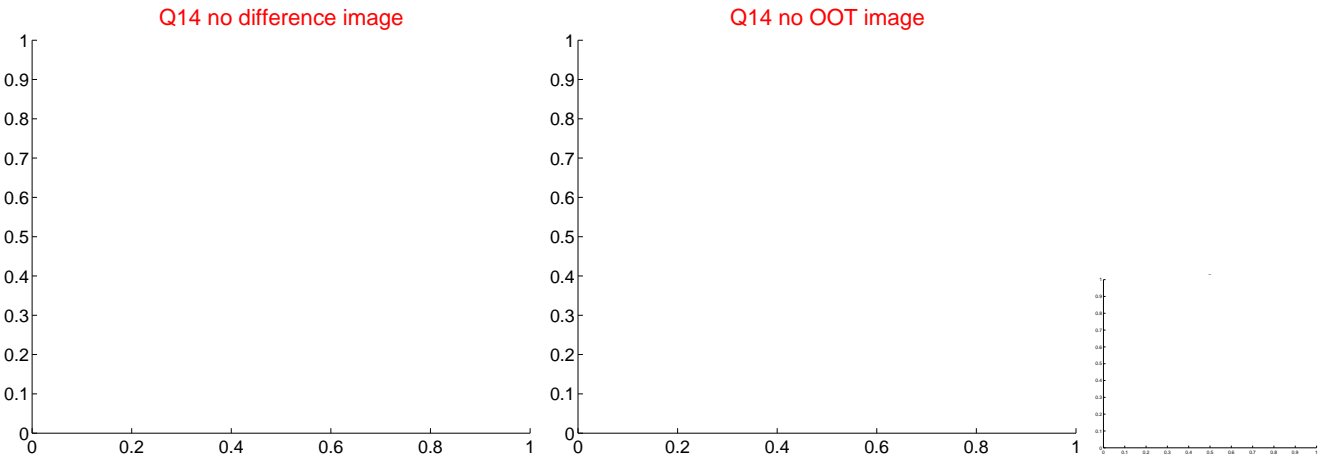
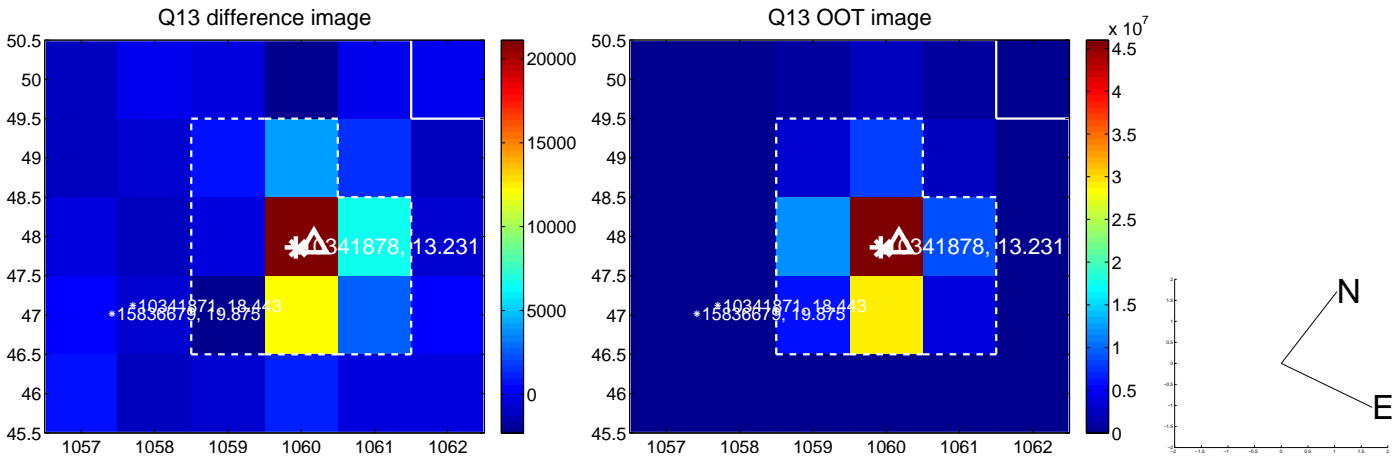
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



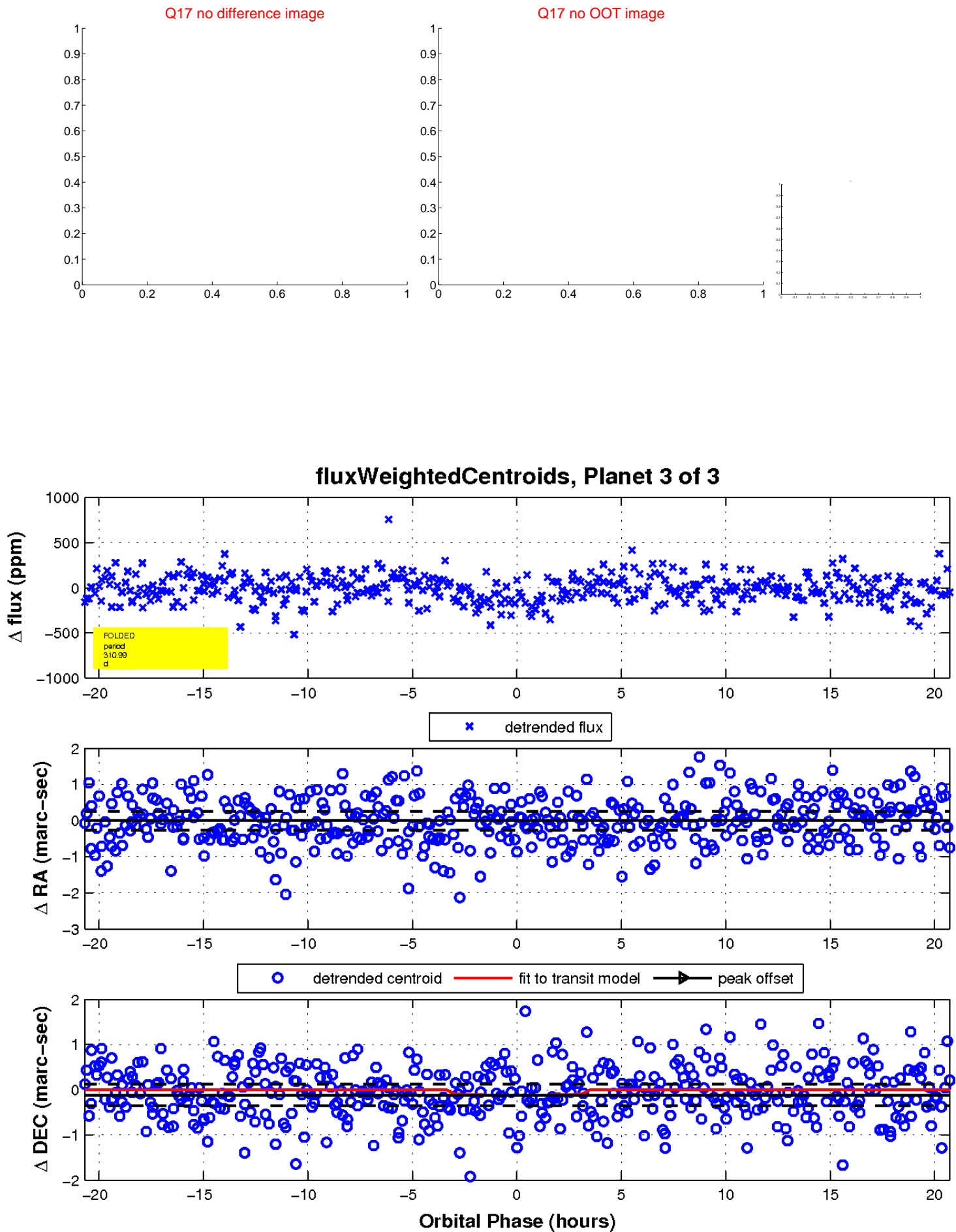
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image

Declination

