

KIC 010485250

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})
010485250-01	OBS	0745.01	16.469837	147.941710	10663.6	9.511	258.8	237.6	0.79	5152	8.11	29.66
010485250-02	OBS	No	16.469878	137.473053	681.9	10.797	15.0	17.0	0.79	5152	2.26	29.66

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010485250-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—HAS_SEC_TCE
010485250-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE

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

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

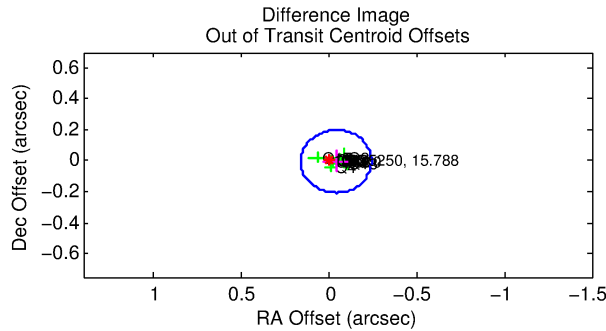
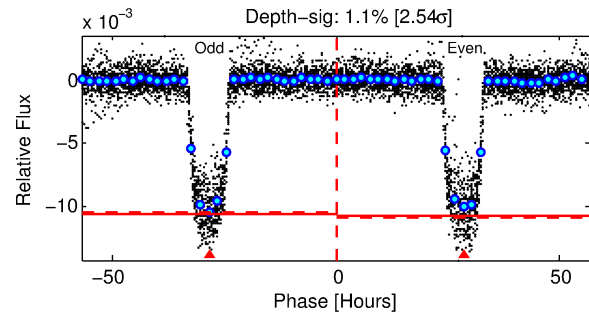
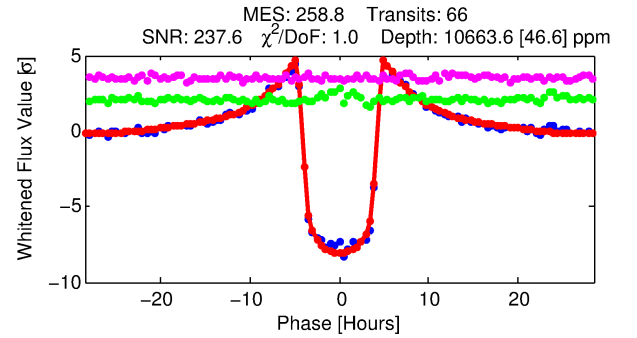
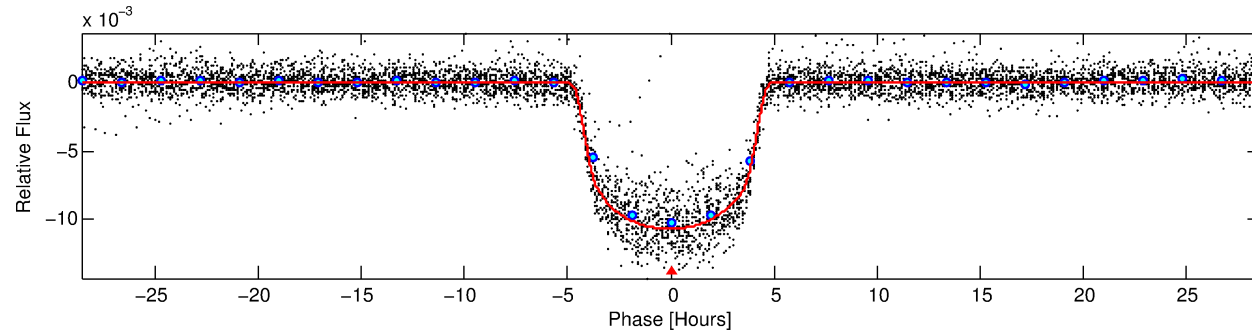
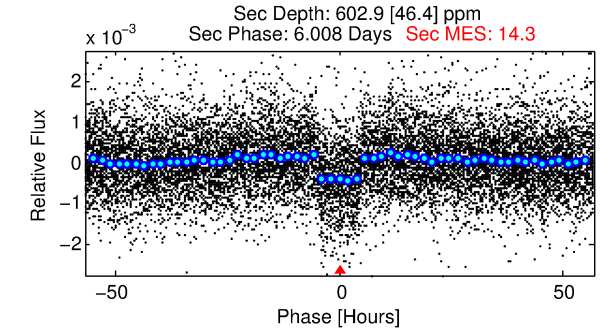
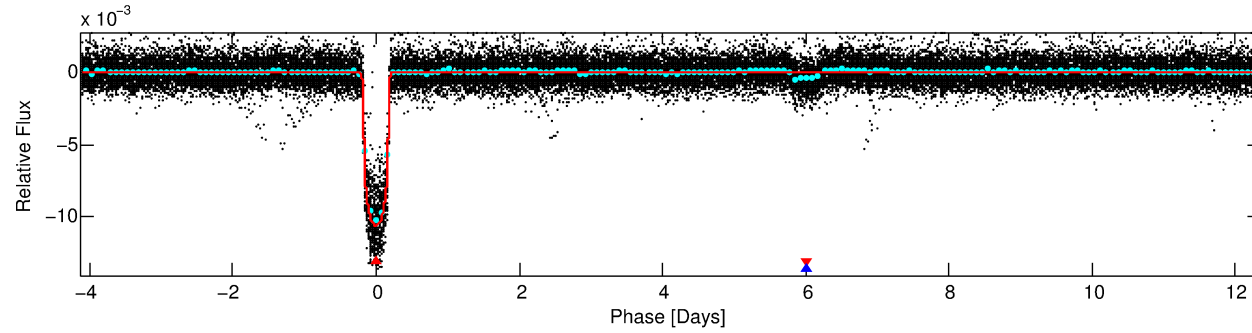
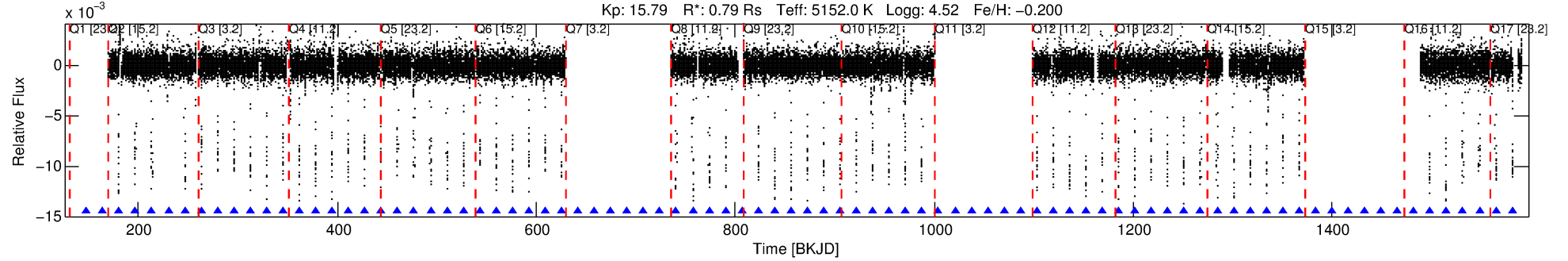
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010485250-01

No Significant Match Found

DV One-Page Summary

KIC: 10485250 Candidate: 1 of 2 Period: 16.470 d
KOI: K00745.01 Corr: 0.996



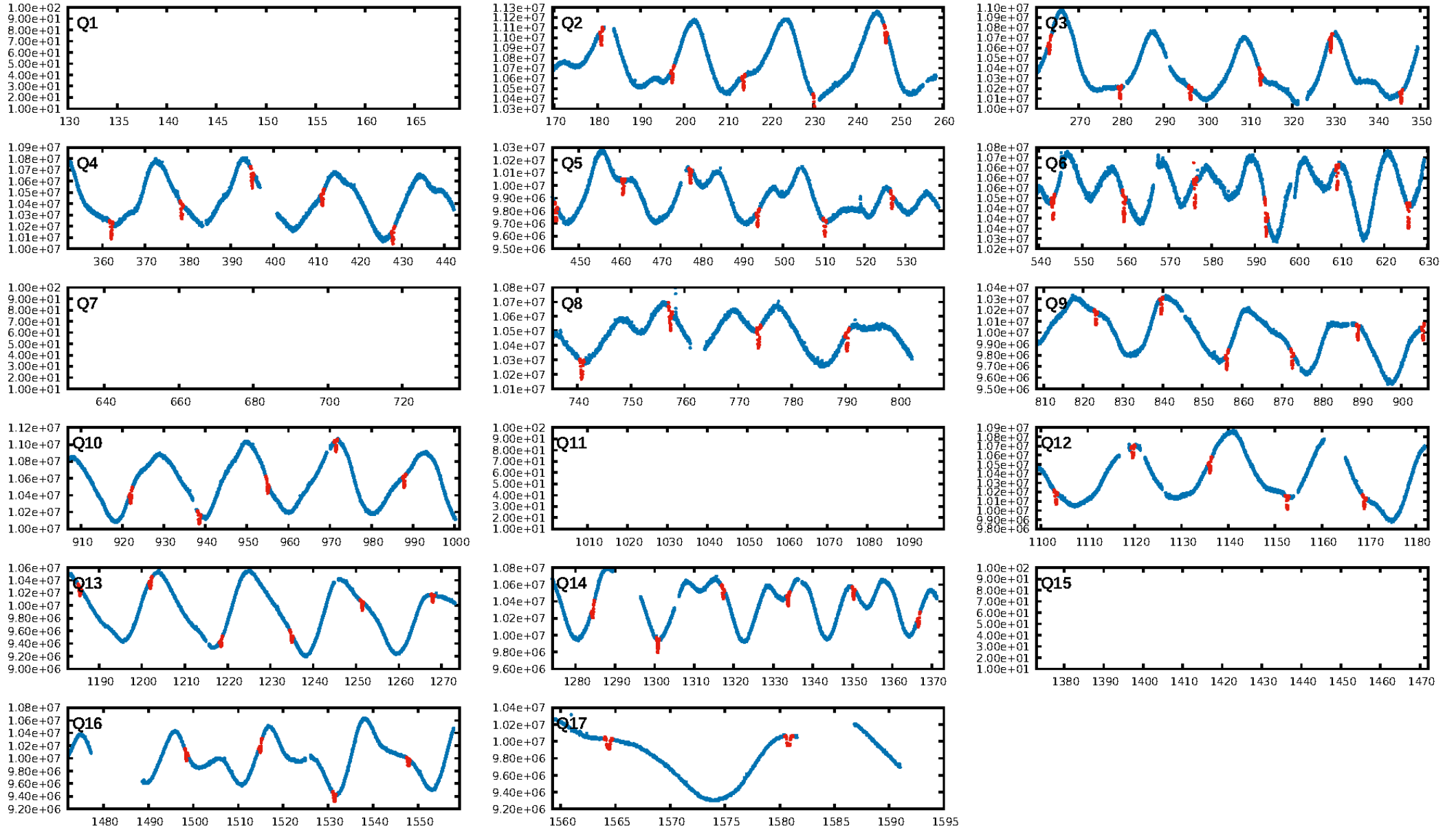
DV Fit Results:

Period = 16.46984 [0.00001] d
Epoch = 147.9417 [0.0006] BKJD
Rp/R* = 0.0946 [0.0006]
a/R* = 13.42 [0.28]
b = 0.41 [0.04]
Seff = 29.66 [5.99]
Teff = 595 [30] K
Rp = 8.11 [0.91] Re
a = 0.1147 [0.0115] AU
Ag = 66.27 [11.46] [5.69 σ]
Teffp = 2625 [100] K [19.48 σ]

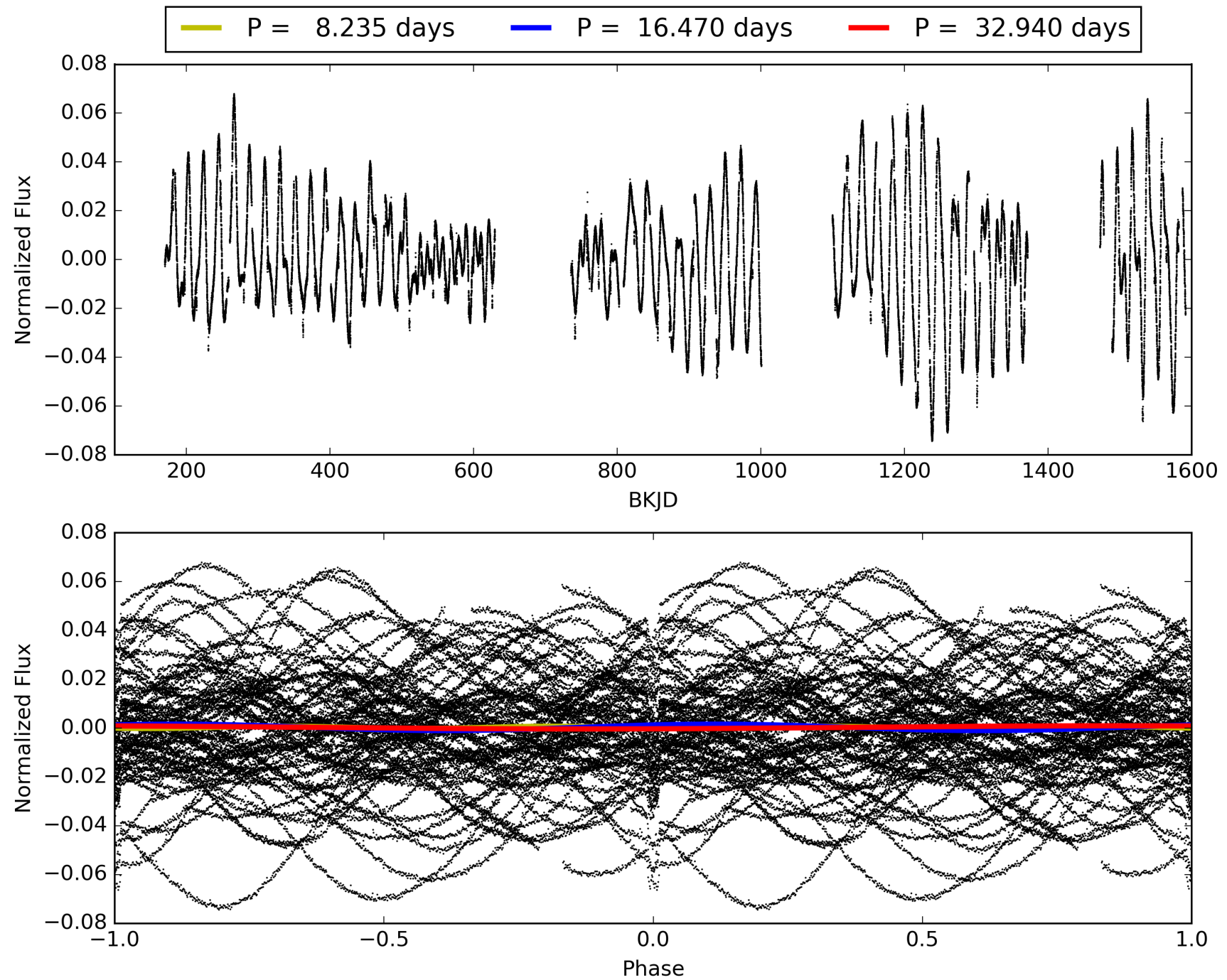
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00 σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 93.1%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [64/64]
GhostDiagnostic-chr: 1.514
Centroid-sig: 0.0%
Centroid-so: 0.267 arcsec [7.86 σ]
OotOffset-rm: 0.040 arcsec [0.60 σ]
KicOffset-rm: 0.017 arcsec [0.24 σ]
OotOffset-st: 4/1/4/4 [13]
KicOffset-st: 4/1/4/4 [13]
DiffImageQuality-fgm: 1.00 [13/13]
DiffImageOverlap-fno: 1.00 [13/13]

TCE 010485250-01, PDC Light Curves

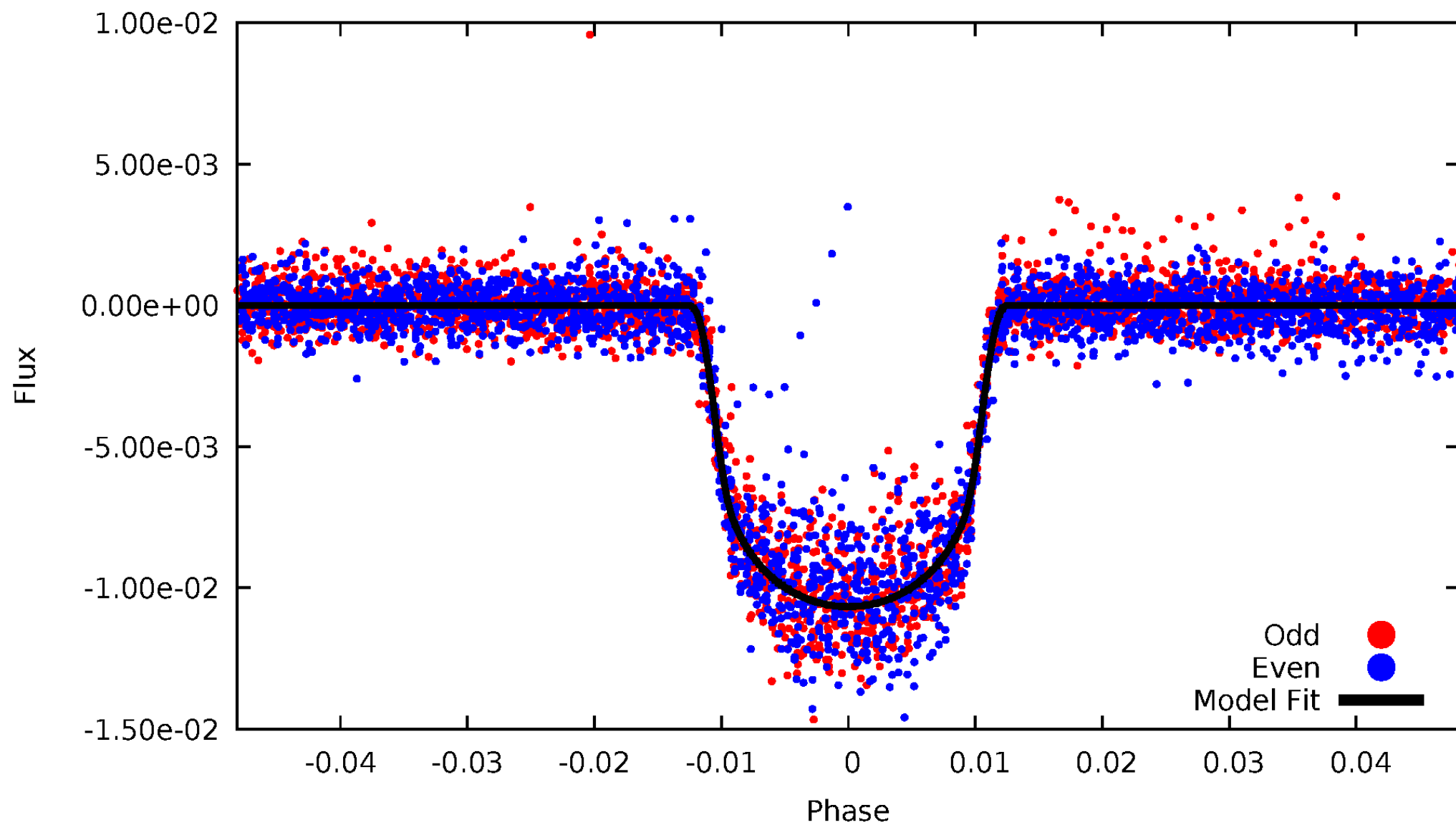


TCE 010485250-01



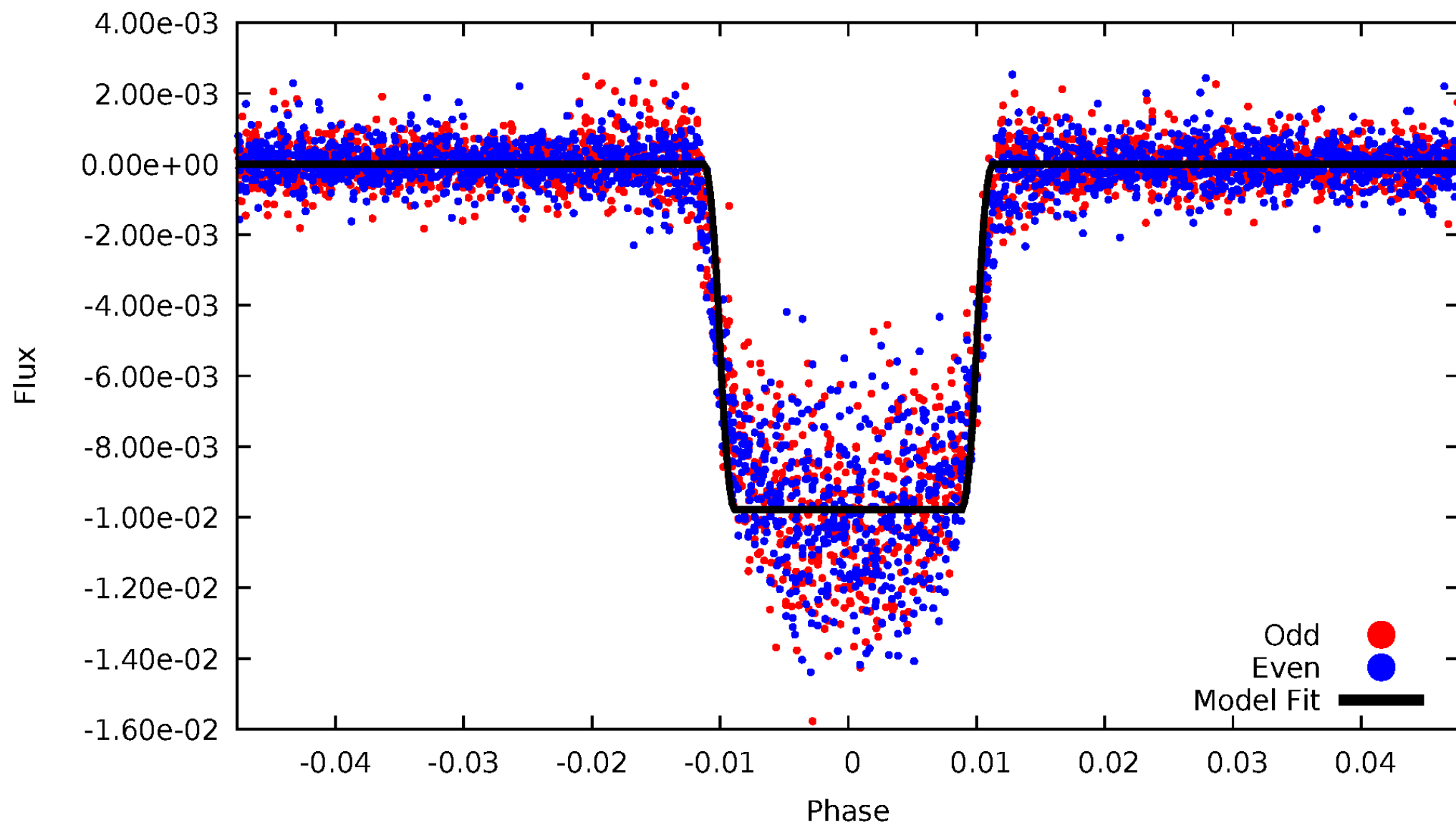
DV Odd/Even

TCE 010485250-01



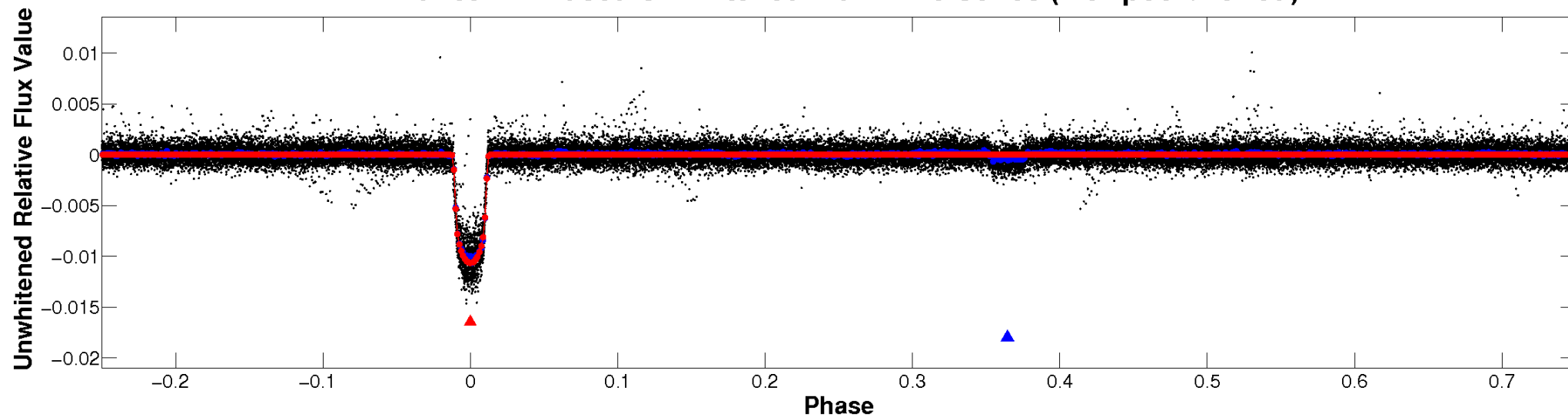
ALT Odd/Even

TCE 010485250-01

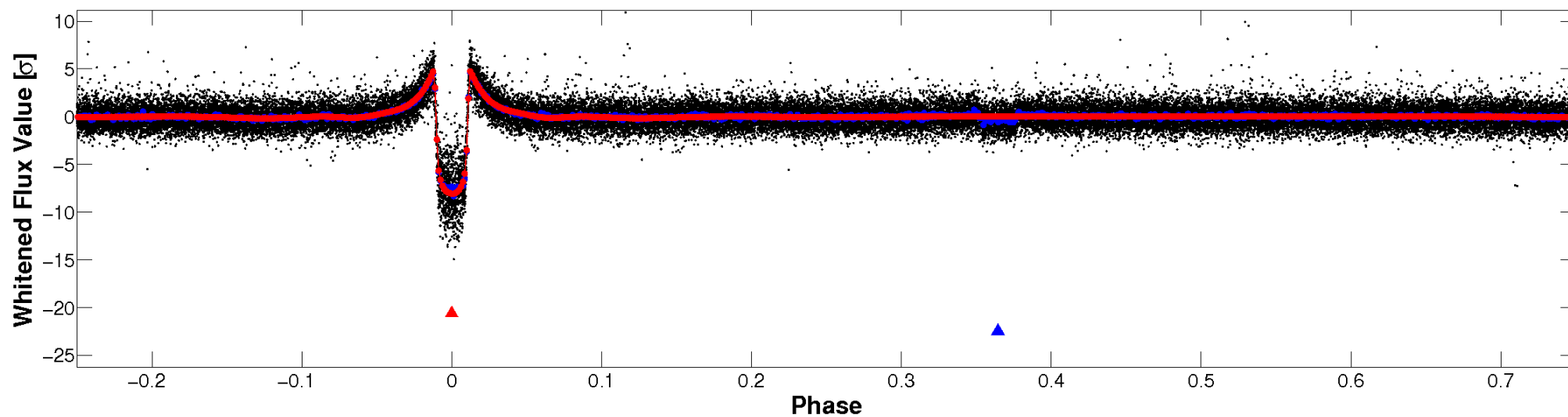


Non-Whitened Vs. Whitened Light Curve

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

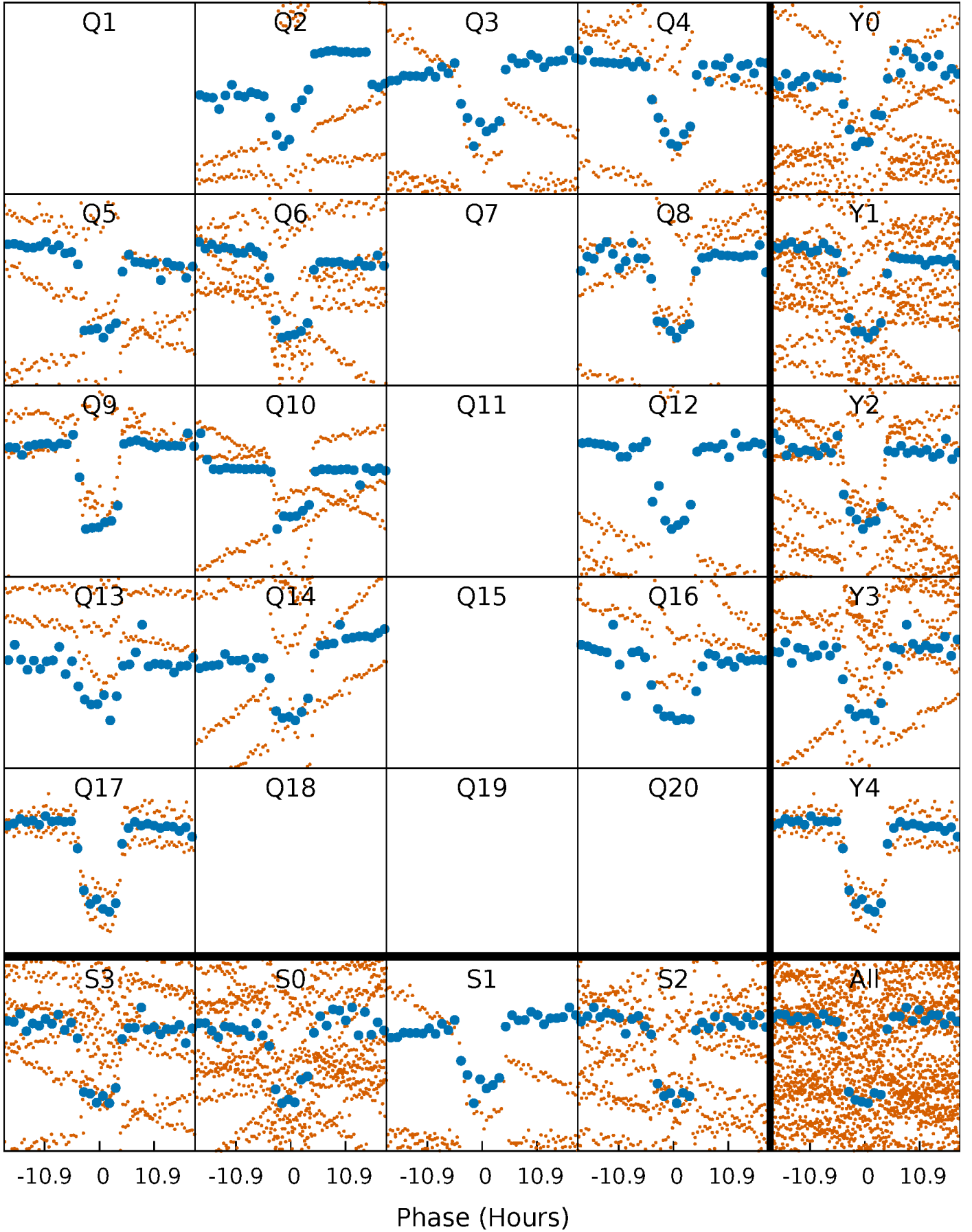


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



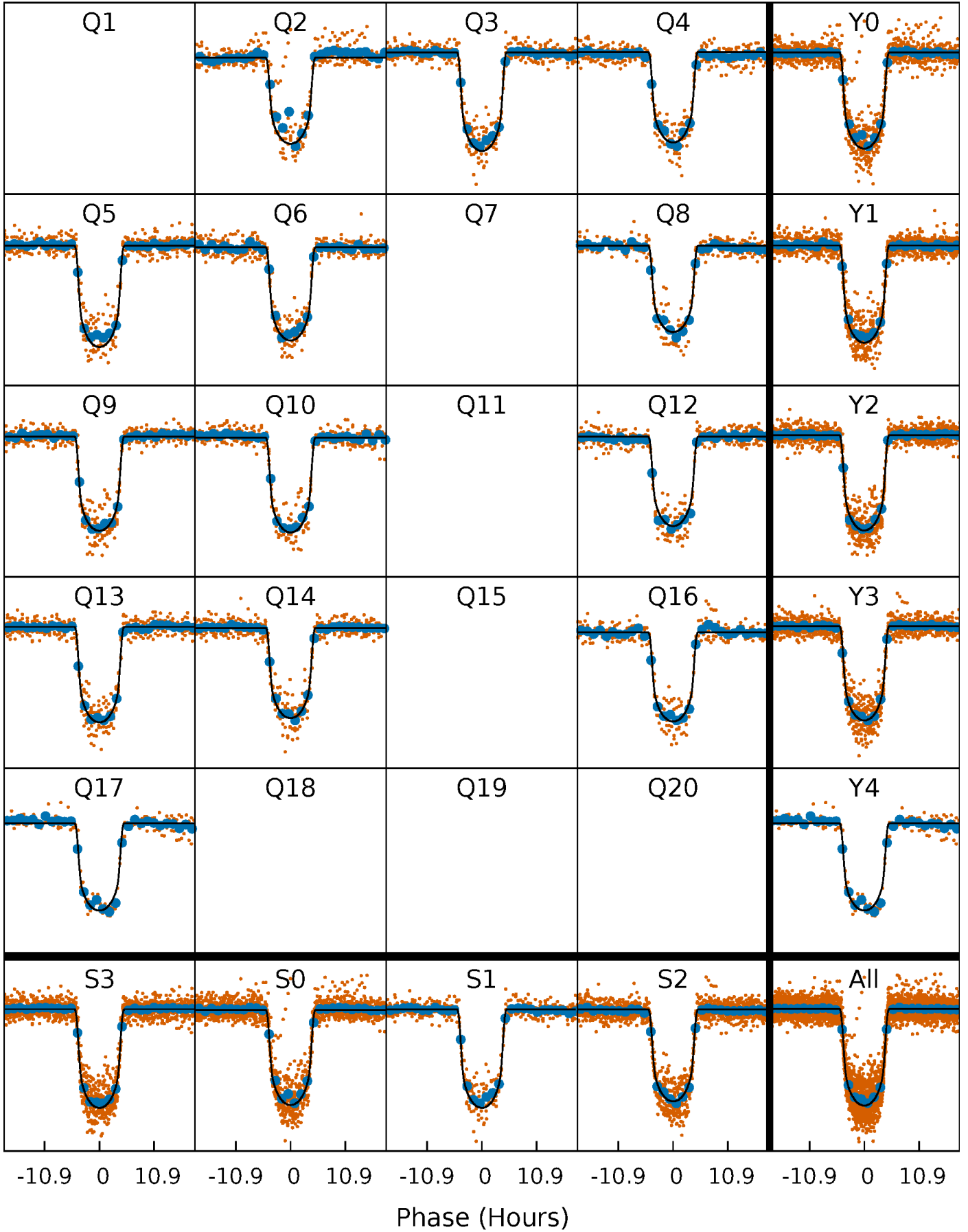
PDC Quarter-Phased Transit Curves

TCE 010485250-01 P= 16.469837 Days $T_0=147.941710$ (BKJD)



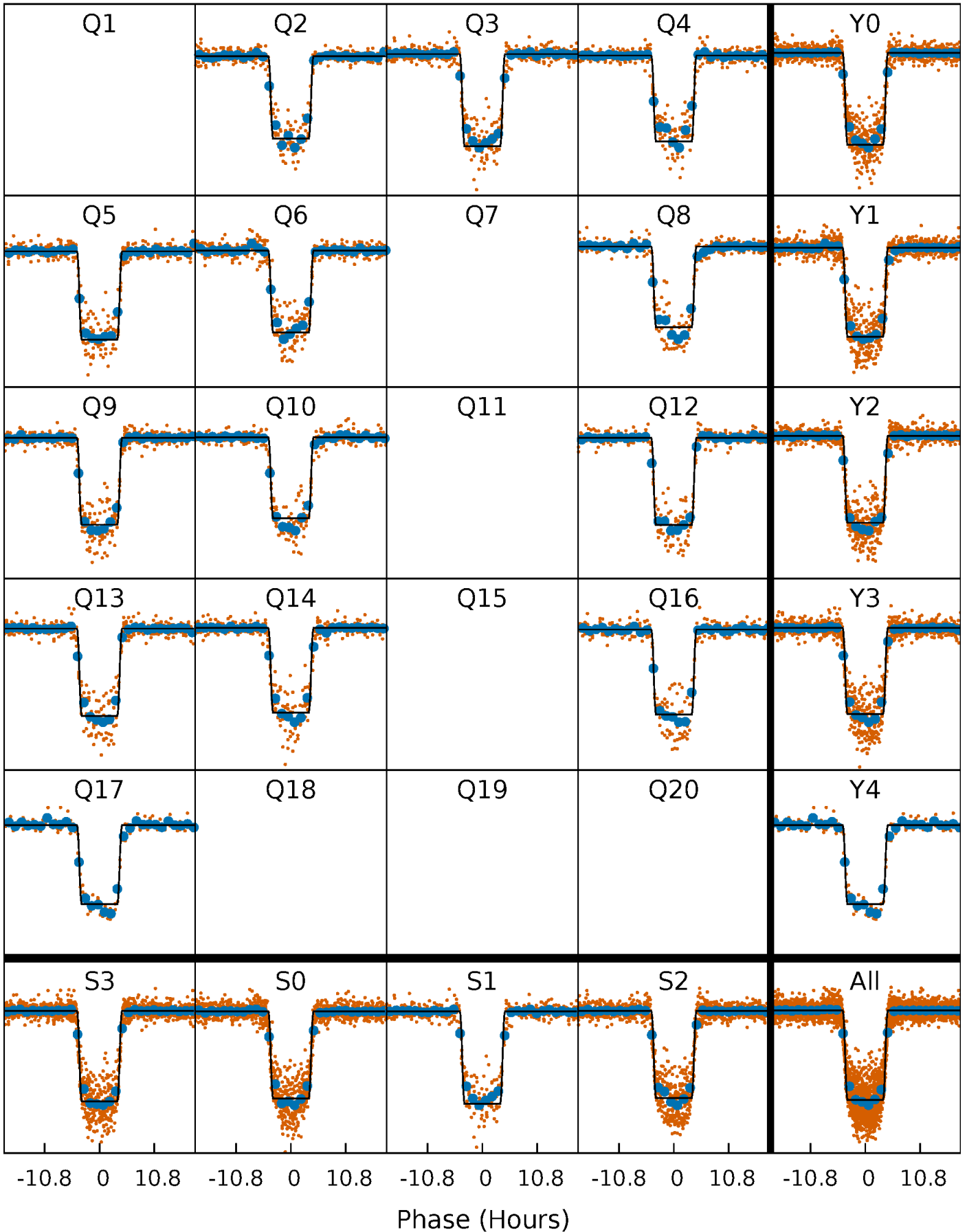
DV Quarter-Phased Transit Curves

TCE 010485250-01 P= 16.469837 Days $T_0=147.941710$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

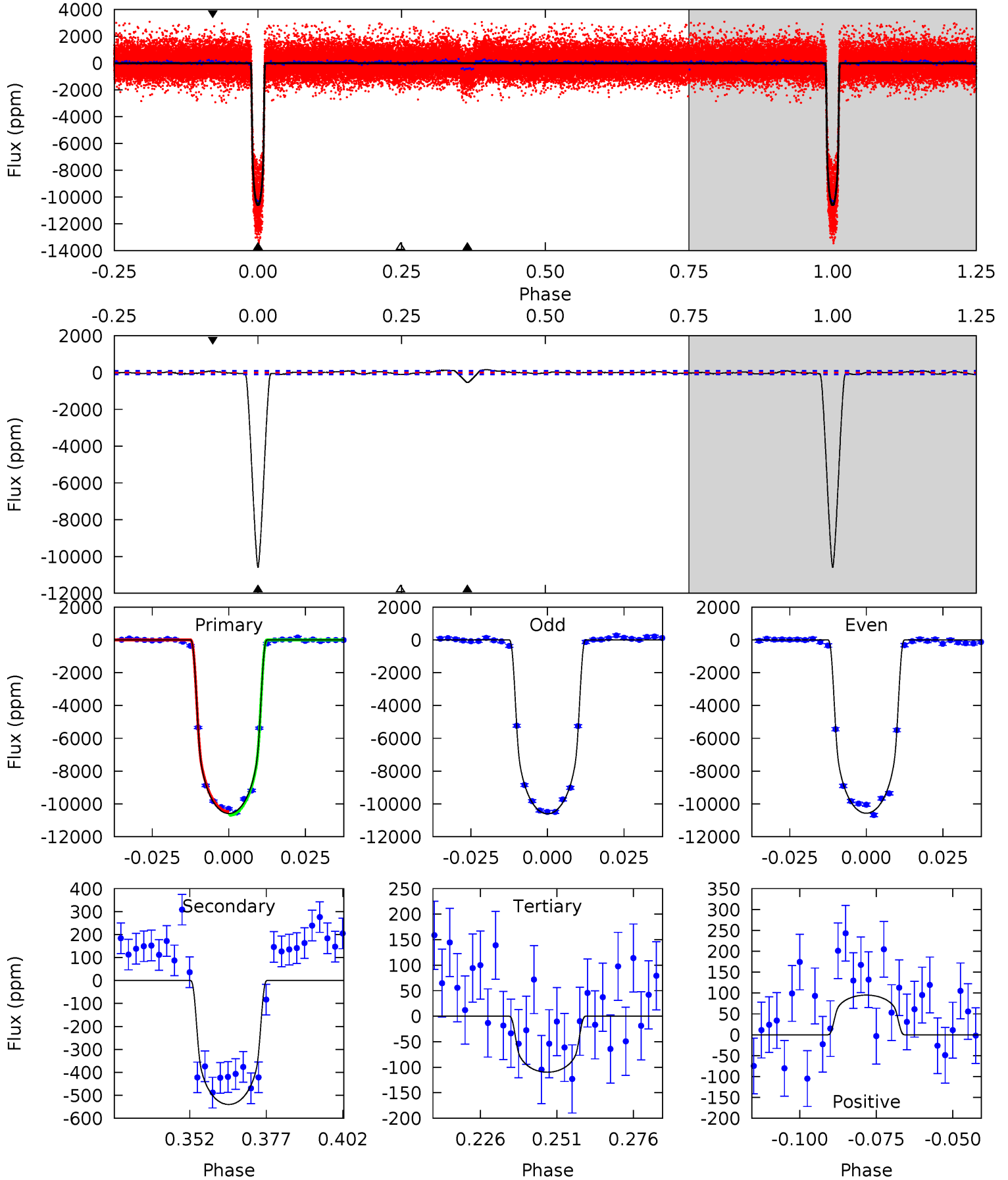
TCE 010485250-01 P= 16.469822 Days $T_0=147.943662$ (BKJD)



DV Model-Shift Uniqueness Test

010485250-01, P = 16.469837 Days, E = 147.941710 Days

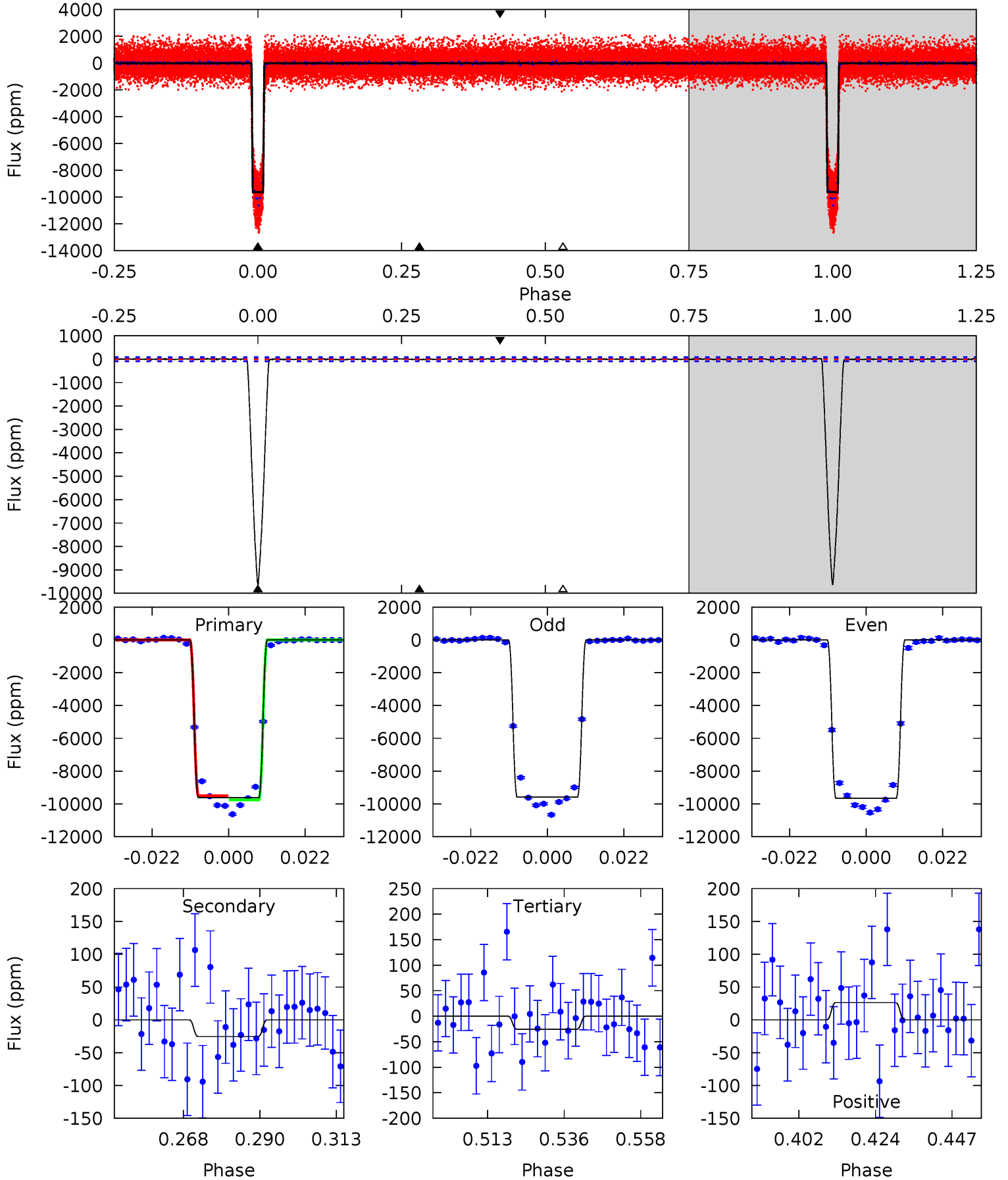
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
517.3	26.4	5.36	4.64	4.85	2.24	2.43	512.0	512.7	21.0	21.7	0.85	0.98	0.02	5.46



Alt Model-Shift Uniqueness Test

010485250-01, P = 16.469822 Days, E = 147.943662 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
542.1	1.43	1.43	1.48	4.87	2.28	0.51	540.7	540.7	0.00	-0.05	1.66	0.99	0.00	7.11



Stellar Parameters For KIC 010485250

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5152^{+168}_{-153}	$4.517^{+0.088}_{-0.072}$	$-0.200^{+0.300}_{-0.300}$	$0.786^{+0.088}_{-0.088}$	$0.741^{+0.106}_{-0.057}$	$2.149^{+0.773}_{-0.479}$
	+3%/-3%	+2%/-2%	+150%/-150%	+11%/-11%	+14%/-8%	+36%/-22%
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 010485250-01 / KOI 0745.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-540 ± 20	$8.16^{+0.56}_{-0.58}$	832^{+35}_{-35}	3137^{+69}_{-65}	59^{+9}_{-7}
Alt.	-25 ± 18	$8.51^{+0.61}_{-0.57}$	831^{+35}_{-39}	2091^{+140}_{-312}	$2.509^{+1.890}_{-1.778}$

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 $A_{obs} \gg 1.0$

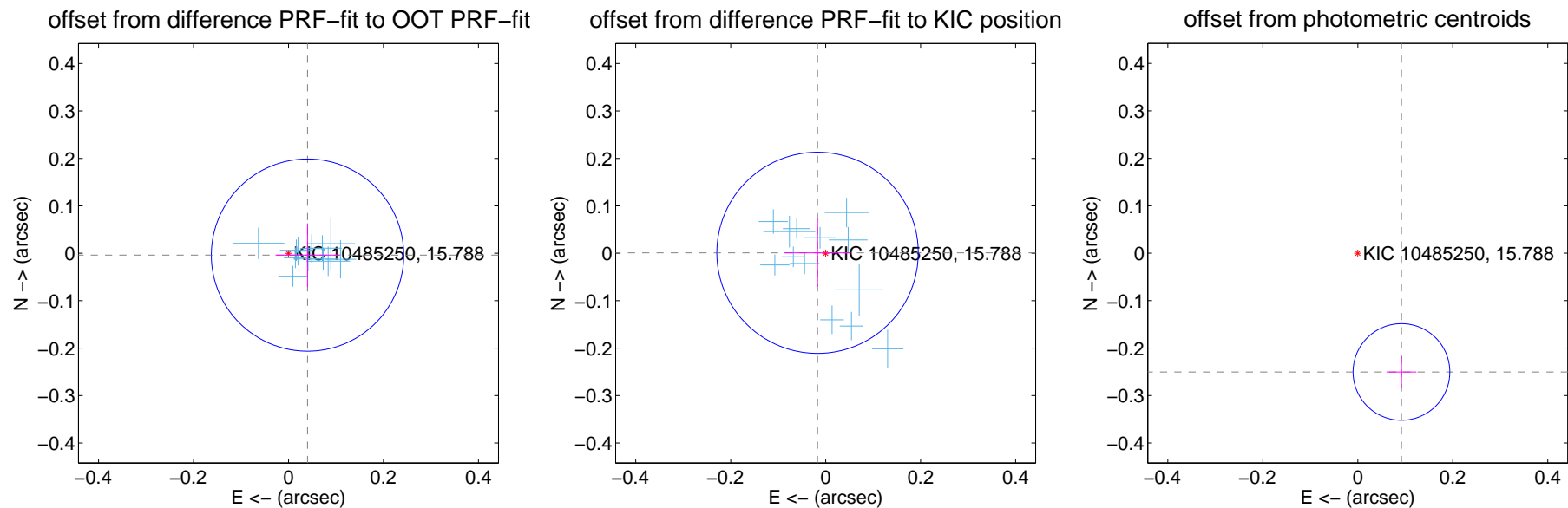
DV Centroid Data

Supplemental centroid analysis for 010485250-01. Kepler magnitude: 15.79. Transit SNR 237.61

There are 13 quarters with good PRF difference image offsets

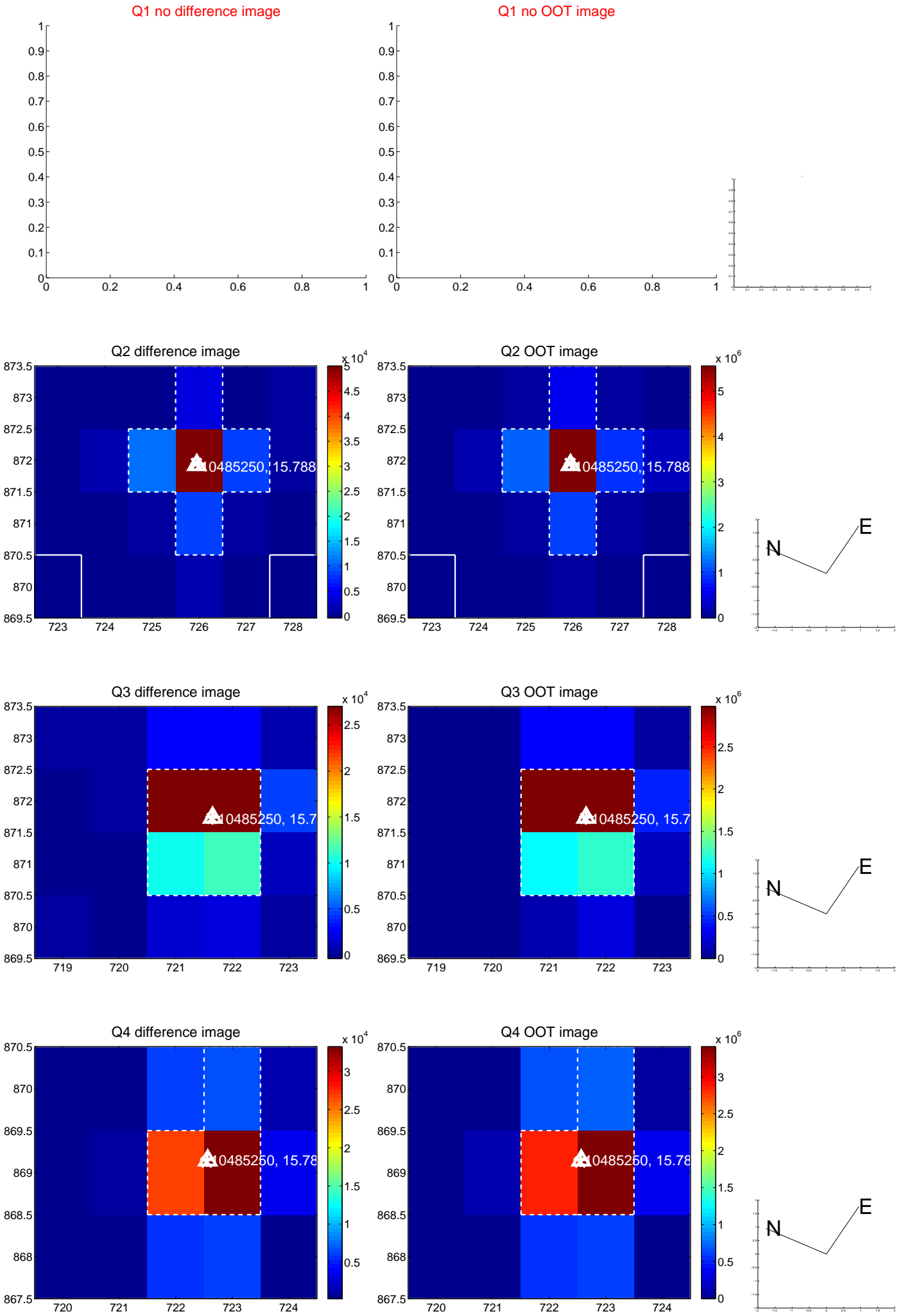
The direct PRF centroid is offset from the target star catalog position by about 0.03 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.040 ± 0.068	0.60	-0.040 ± 0.068	-0.004 ± 0.067
PRF-fit source offset from KIC position	0.017 ± 0.071	0.24	0.017 ± 0.070	0.001 ± 0.072
photometric centroid source offset	0.27 ± 0.03	7.86	-0.09 ± 0.03	-0.25 ± 0.03

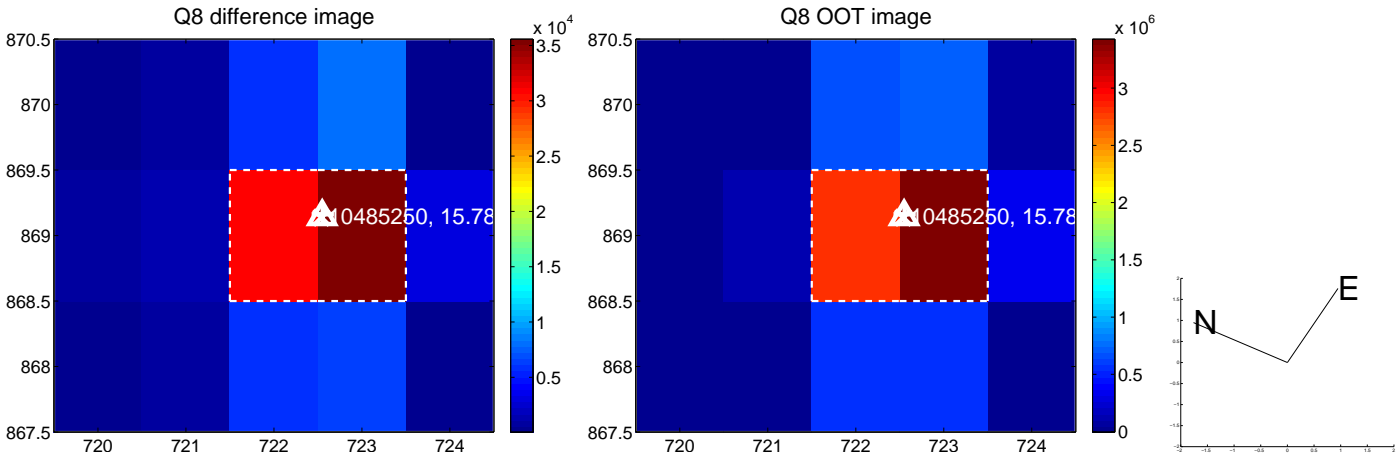
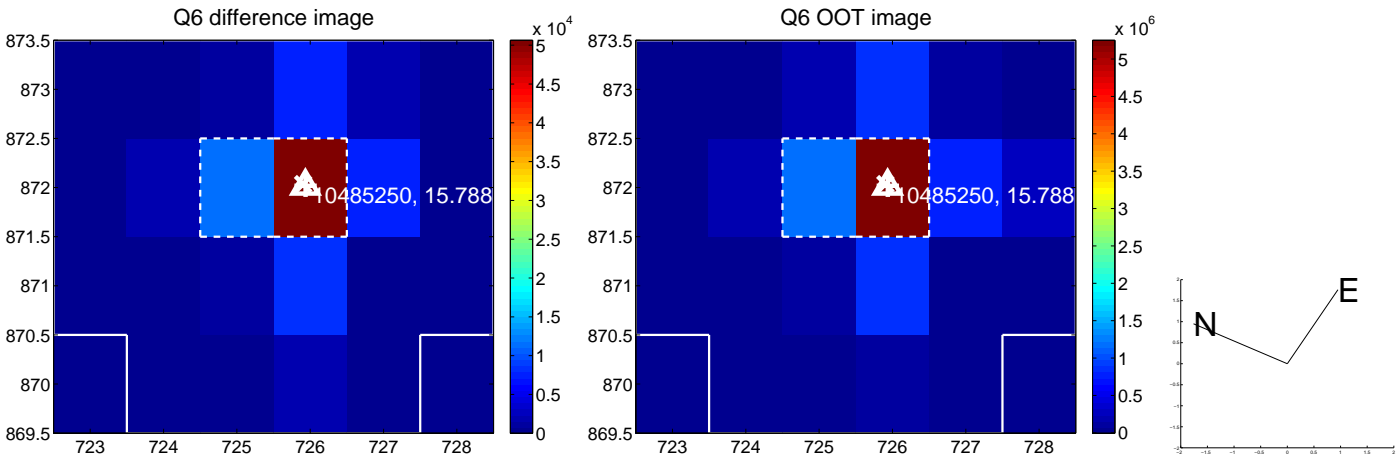
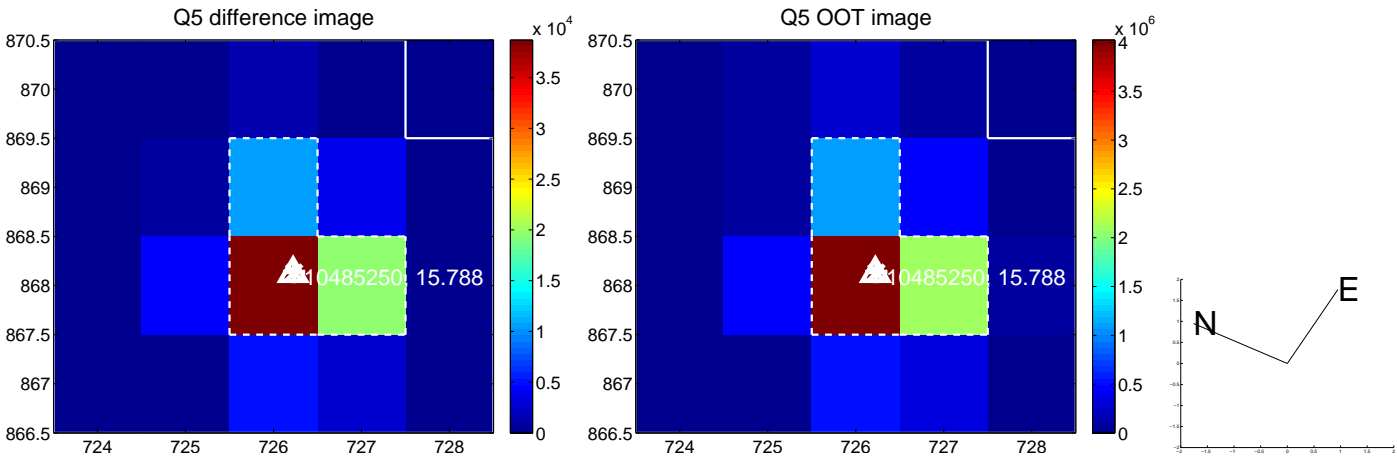


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

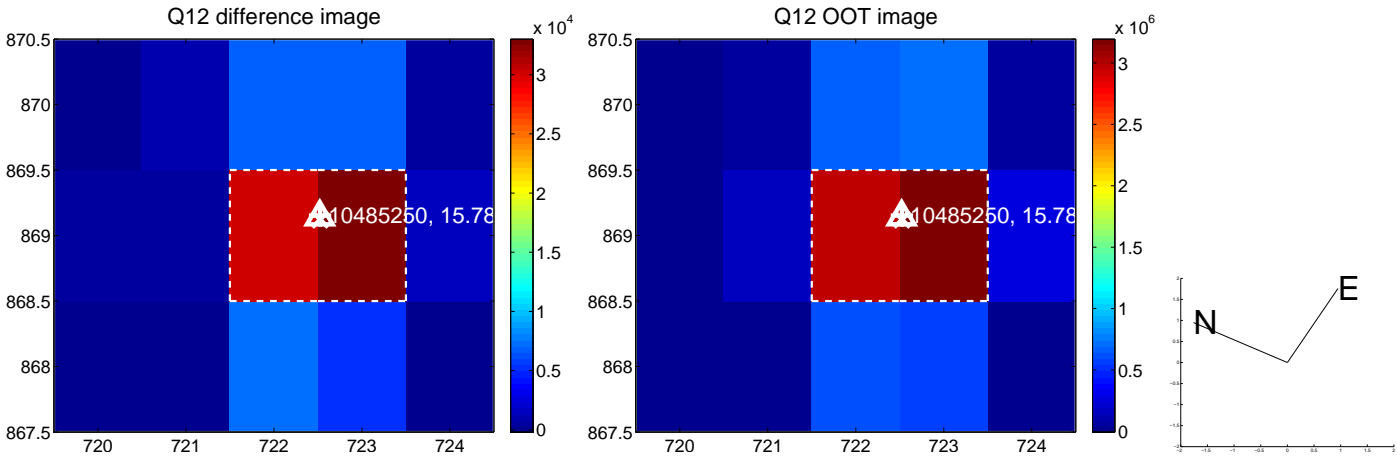
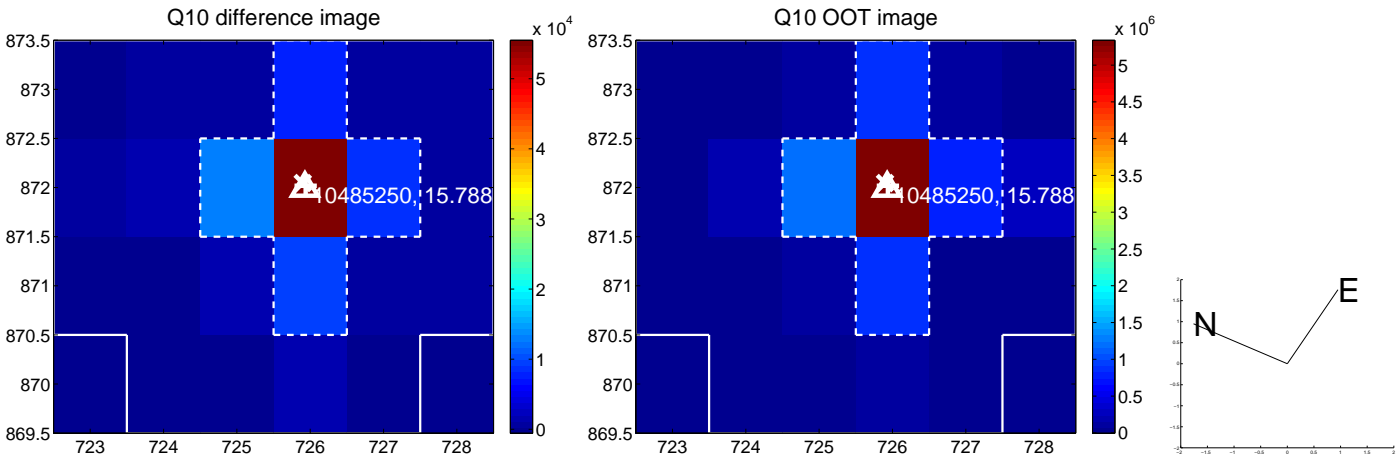
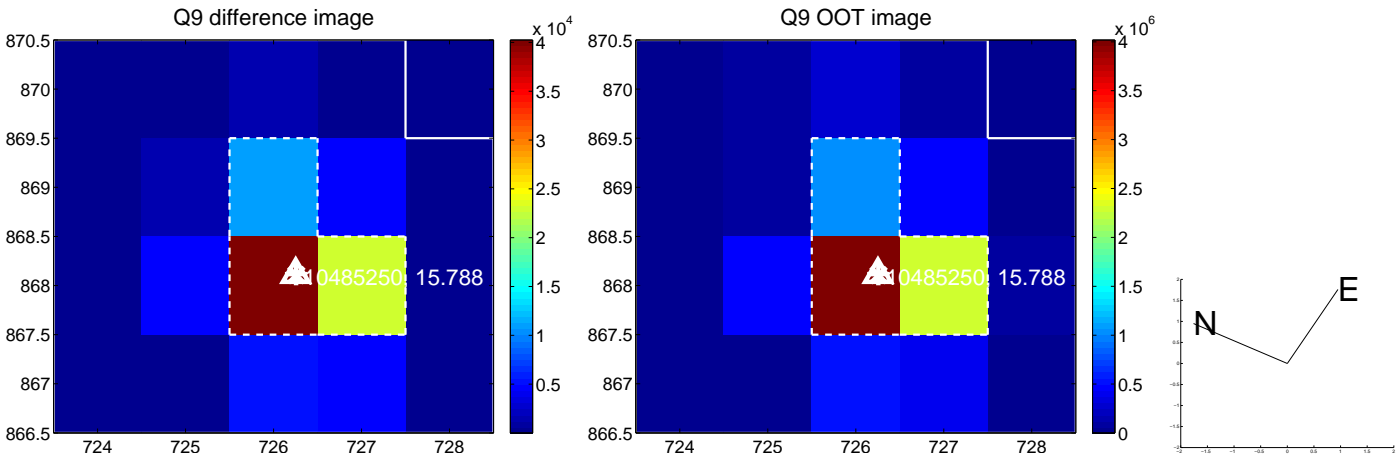
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



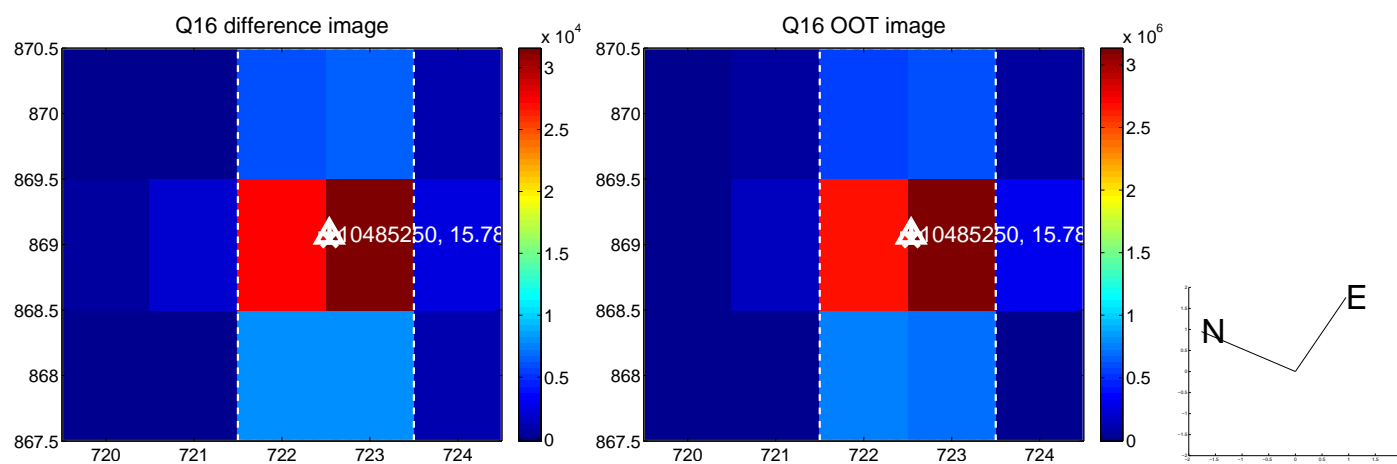
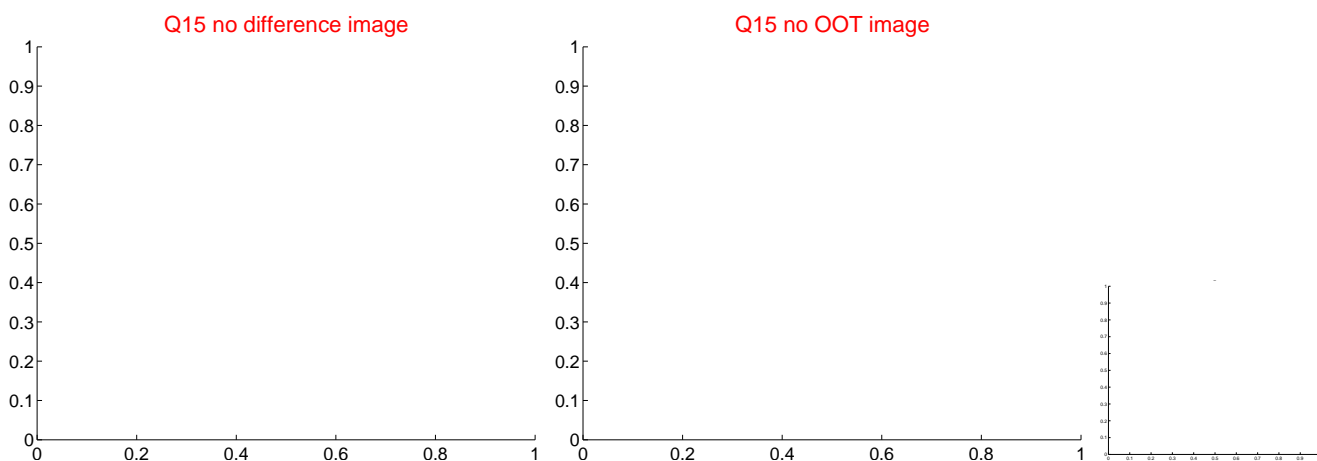
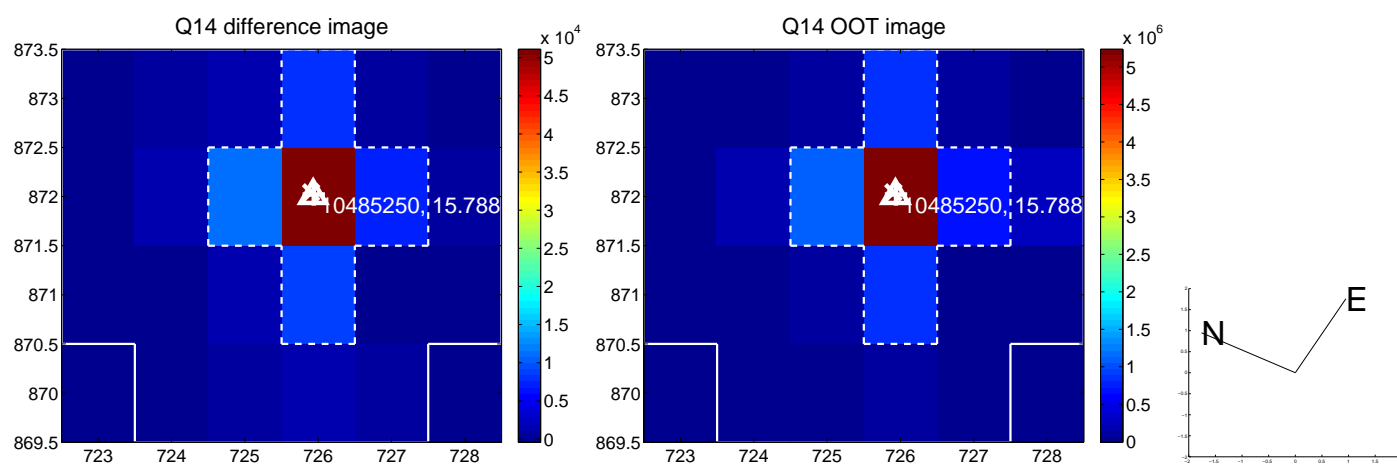
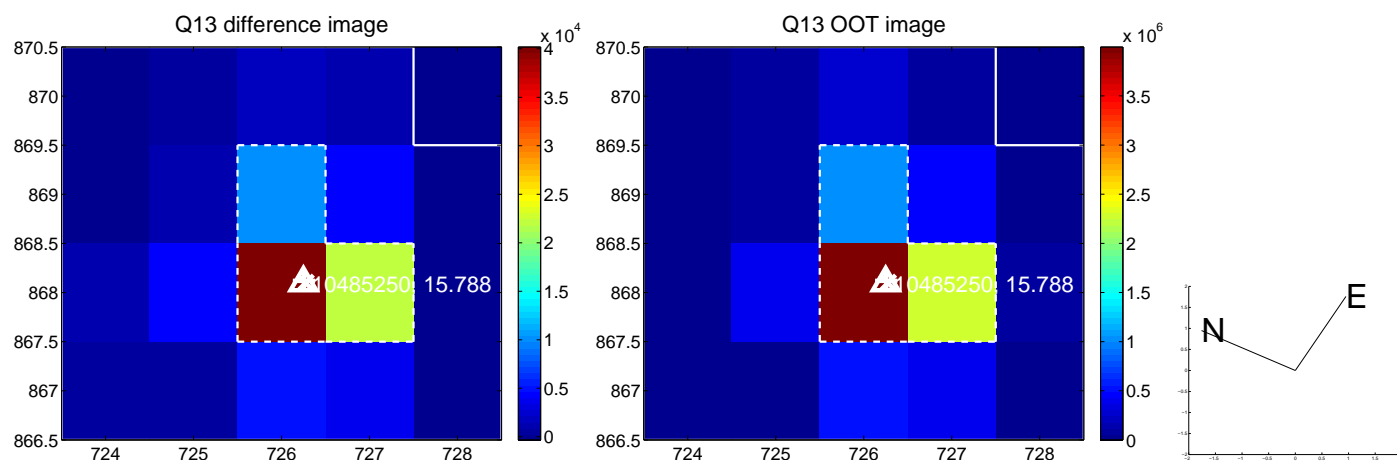
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



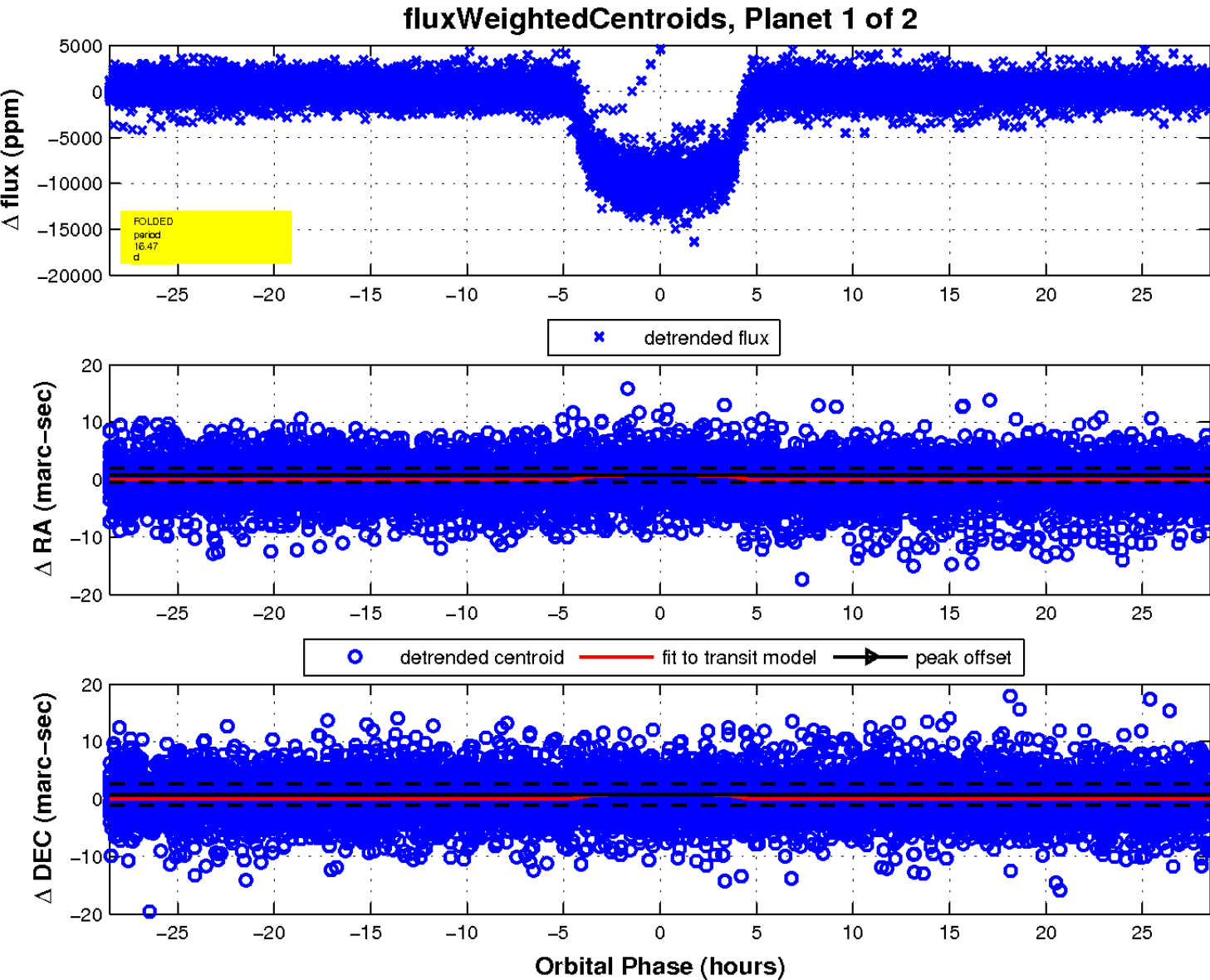
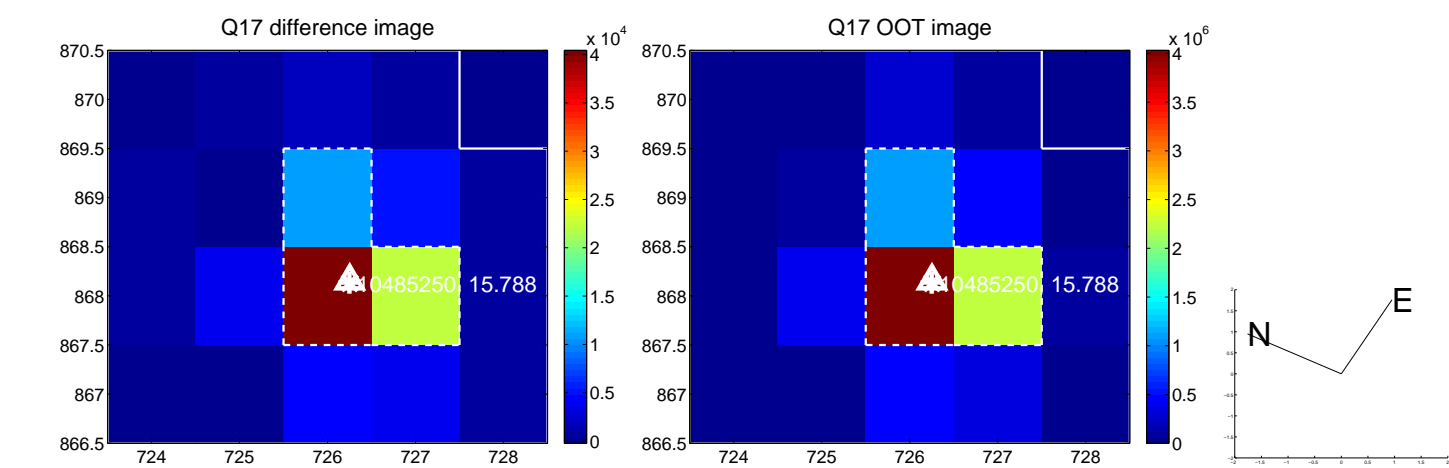
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

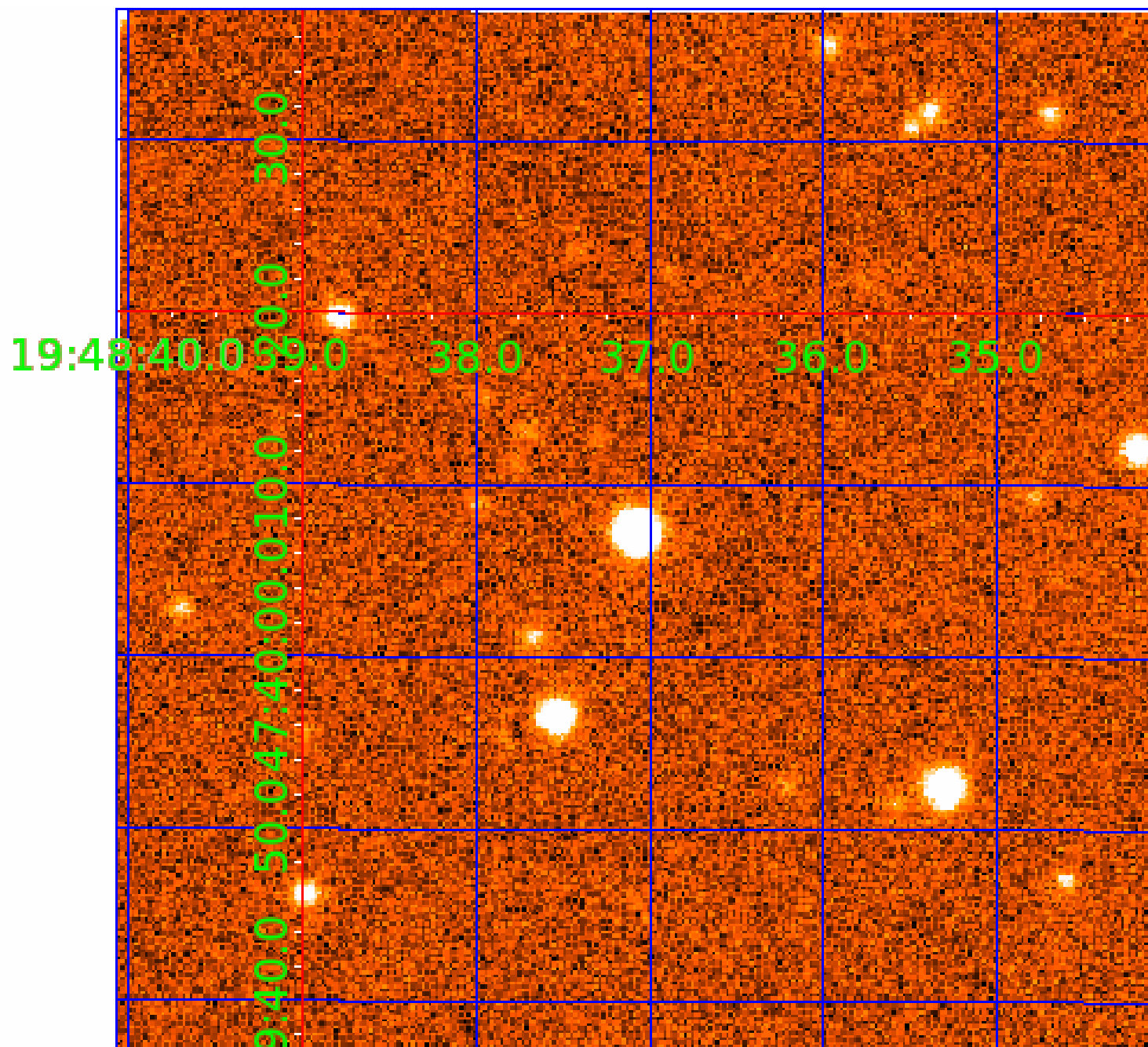


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 010485250

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})
010485250-01	OBS	0745.01	16.469837	147.941710	10663.6	9.511	258.8	237.6	0.79	5152	8.11	29.66
010485250-02	OBS	No	16.469878	137.473053	681.9	10.797	15.0	17.0	0.79	5152	2.26	29.66

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010485250-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—HAS_SEC_TCE
010485250-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE

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 010485250-02

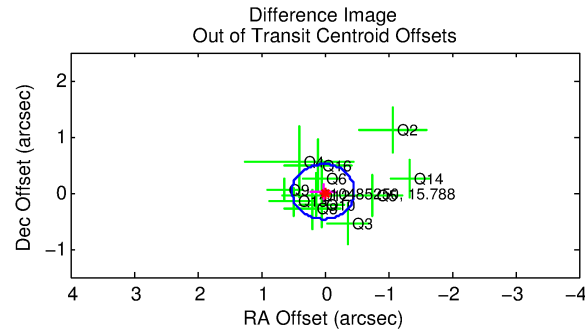
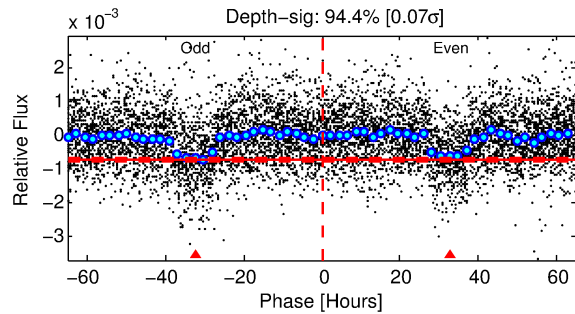
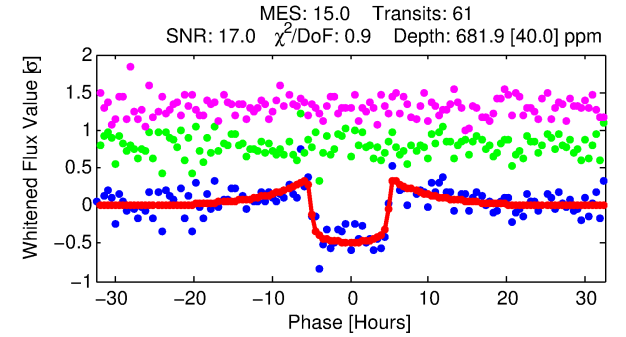
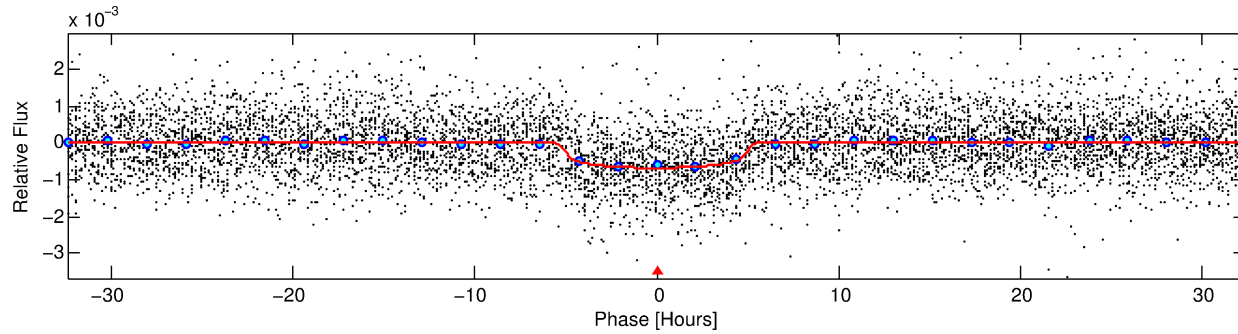
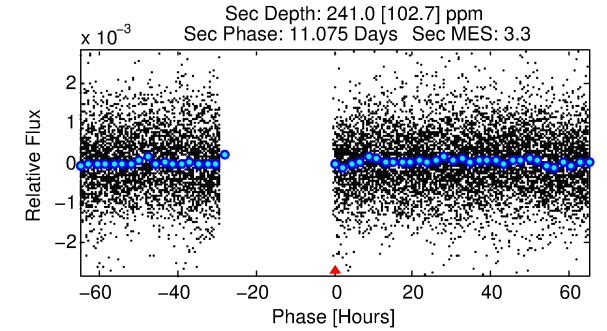
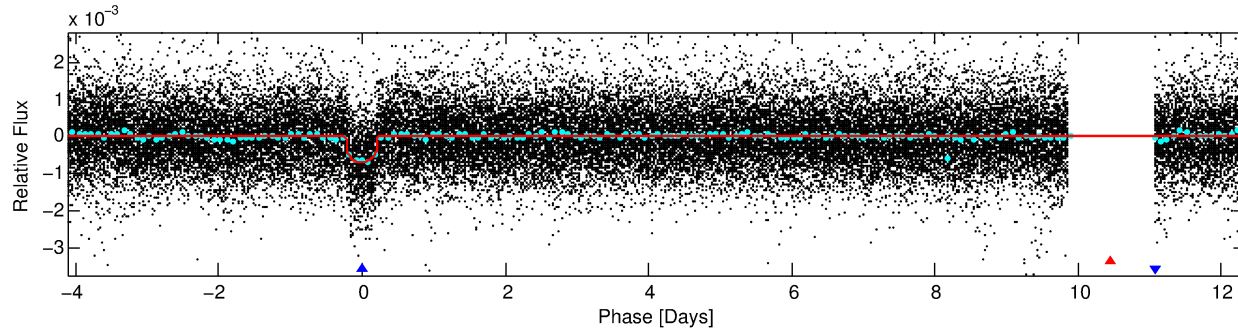
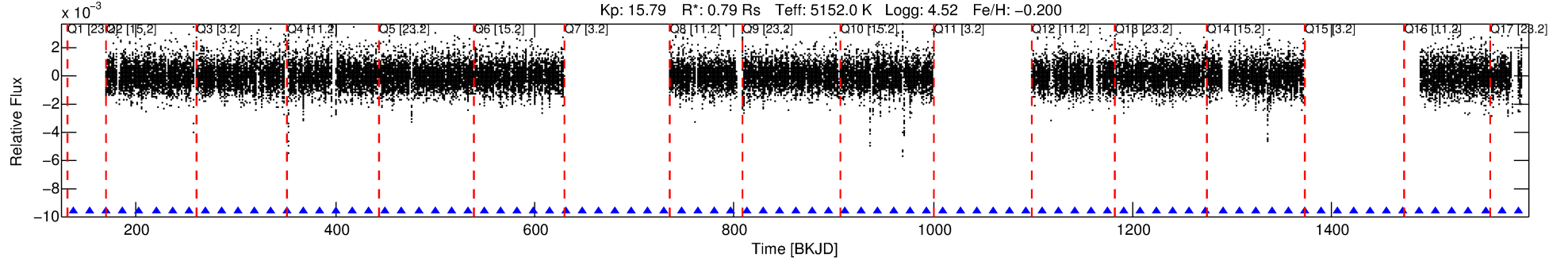
No Significant Match Found

DV One-Page Summary

KIC: 10485250 Candidate: 2 of 2 Period: 16.470 d

KOI: K00745 Corr: No Ephemeris Match

Kp: 15.79 R*: 0.79 Rs Teff: 5152.0 K Logg: 4.52 Fe/H: -0.200



DV Fit Results:

Period = 16.46988 [0.00015] d
Epoch = 137.4731 [0.0071] BKJD
Rp/R* = 0.0263 [0.0032]
a/R* = 7.94 [3.49]
b = 0.77 [0.24]
Seff = 29.66 [5.99]
Teq = 595 [30] K
Rp = 2.26 [0.38] Re
a = 0.1147 [0.0115] AU
Ag = 342.52 [176.63] [1.93σ]
Teffp = 3958 [504] K [6.66σ]

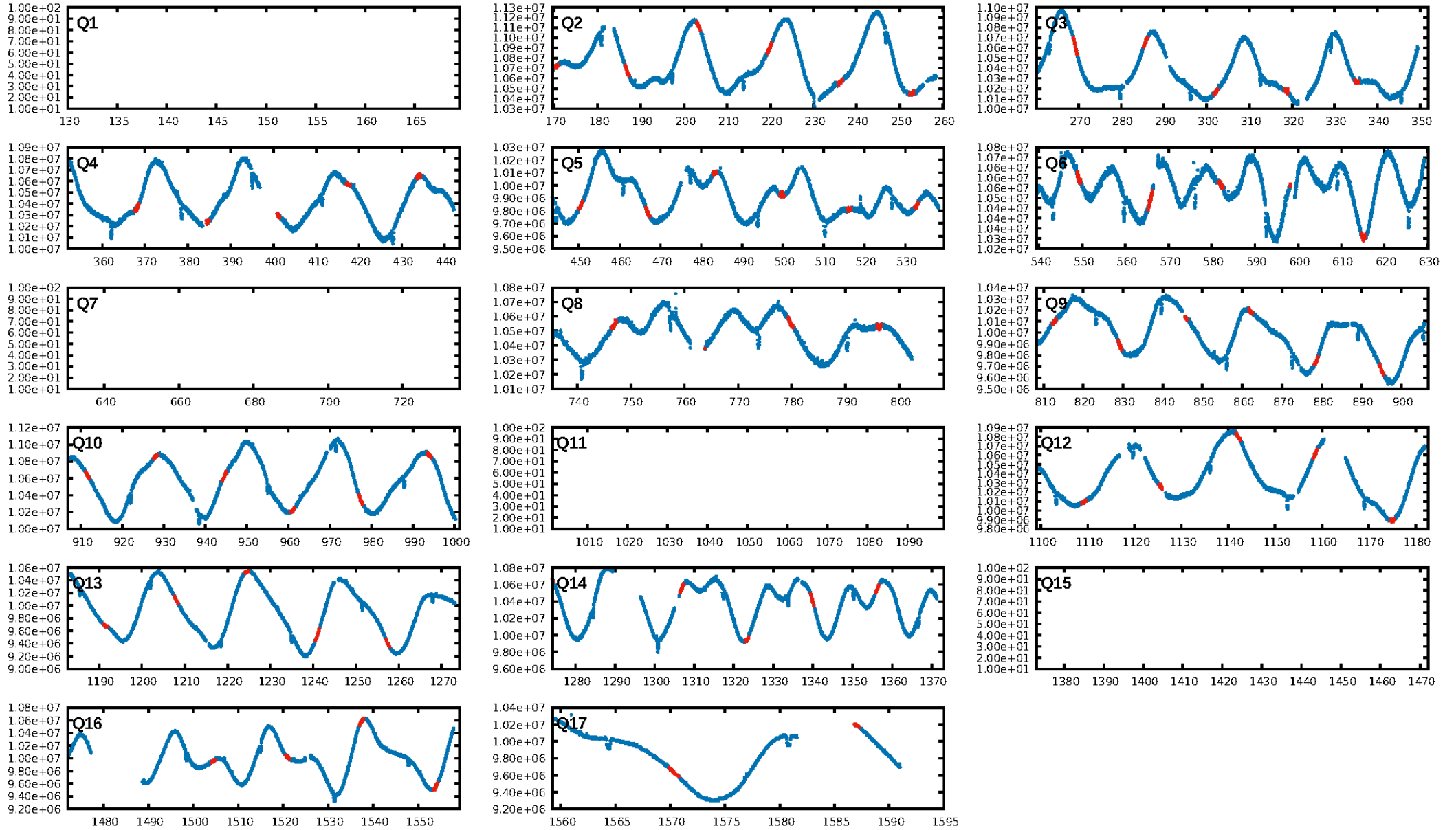
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 96.7%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 6.87e-32
RollingBand-fgt: 1.00 [59/59]
GhostDiagnostic-chr: -1.268
Centroid-sig: 24.8%
Centroid-so: 0.654 arcsec [1.28σ]
OotOffset-rm: 0.031 arcsec [0.19σ]
KicOffset-rm: 0.089 arcsec [0.47σ]
OotOffset-st: 4/1/4/3 [12]
KicOffset-st: 4/1/4/3 [12]
DiffImageQuality-fgm: 1.00 [12/12]
DiffImageOverlap-fno: 1.00 [13/13]

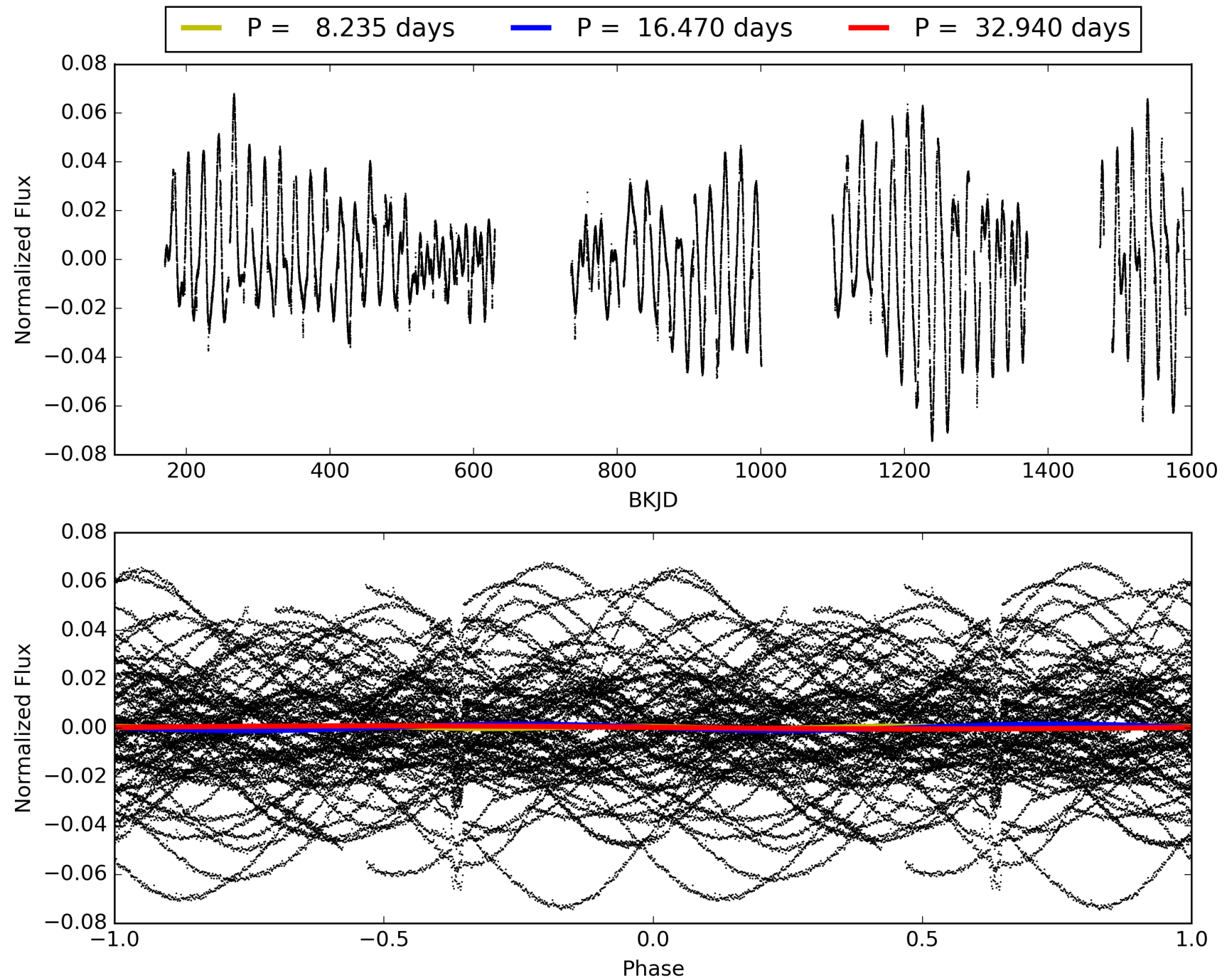
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 03:32:30 Z

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

TCE 010485250-02, PDC Light Curves

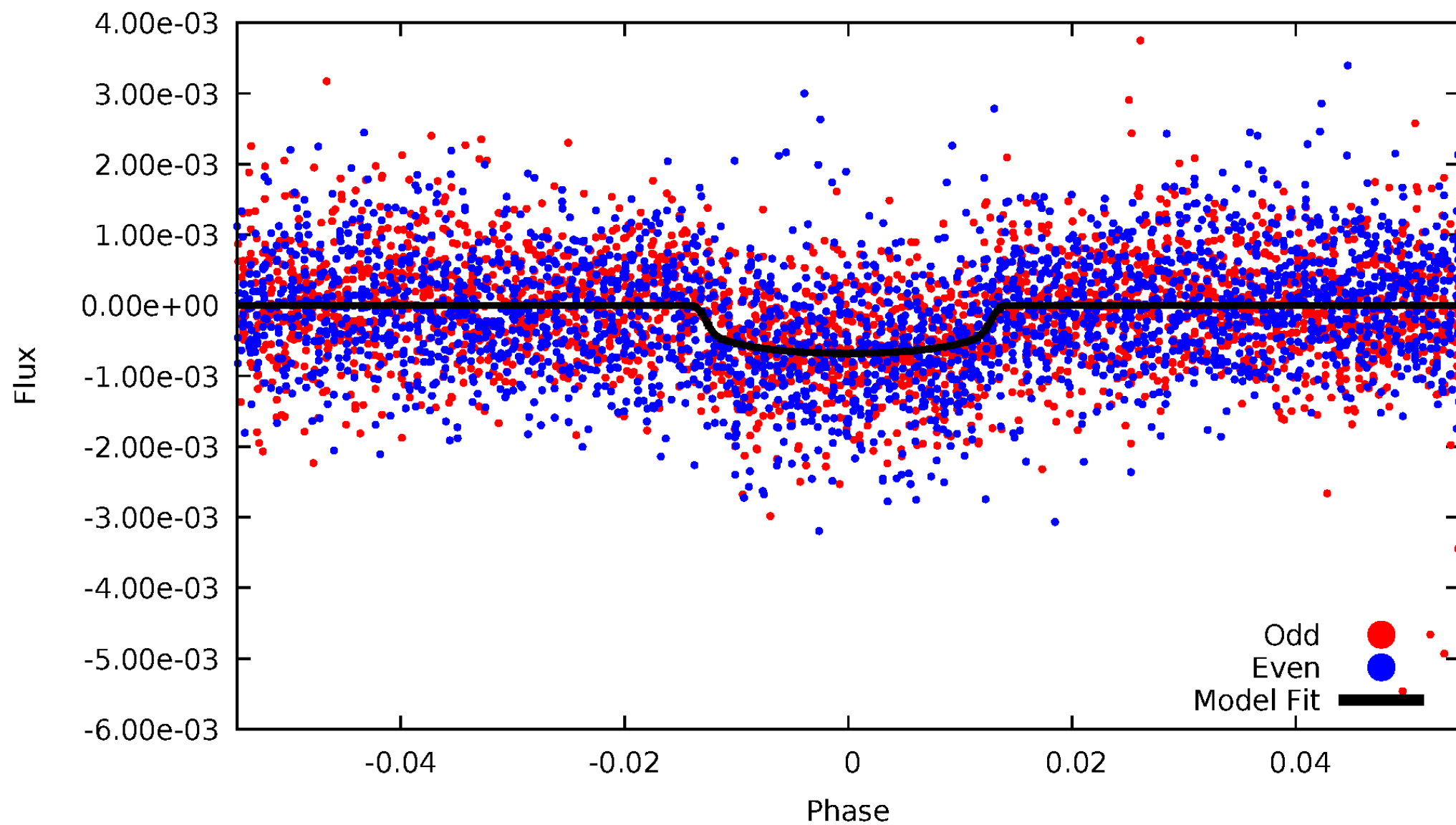


TCE 010485250-02



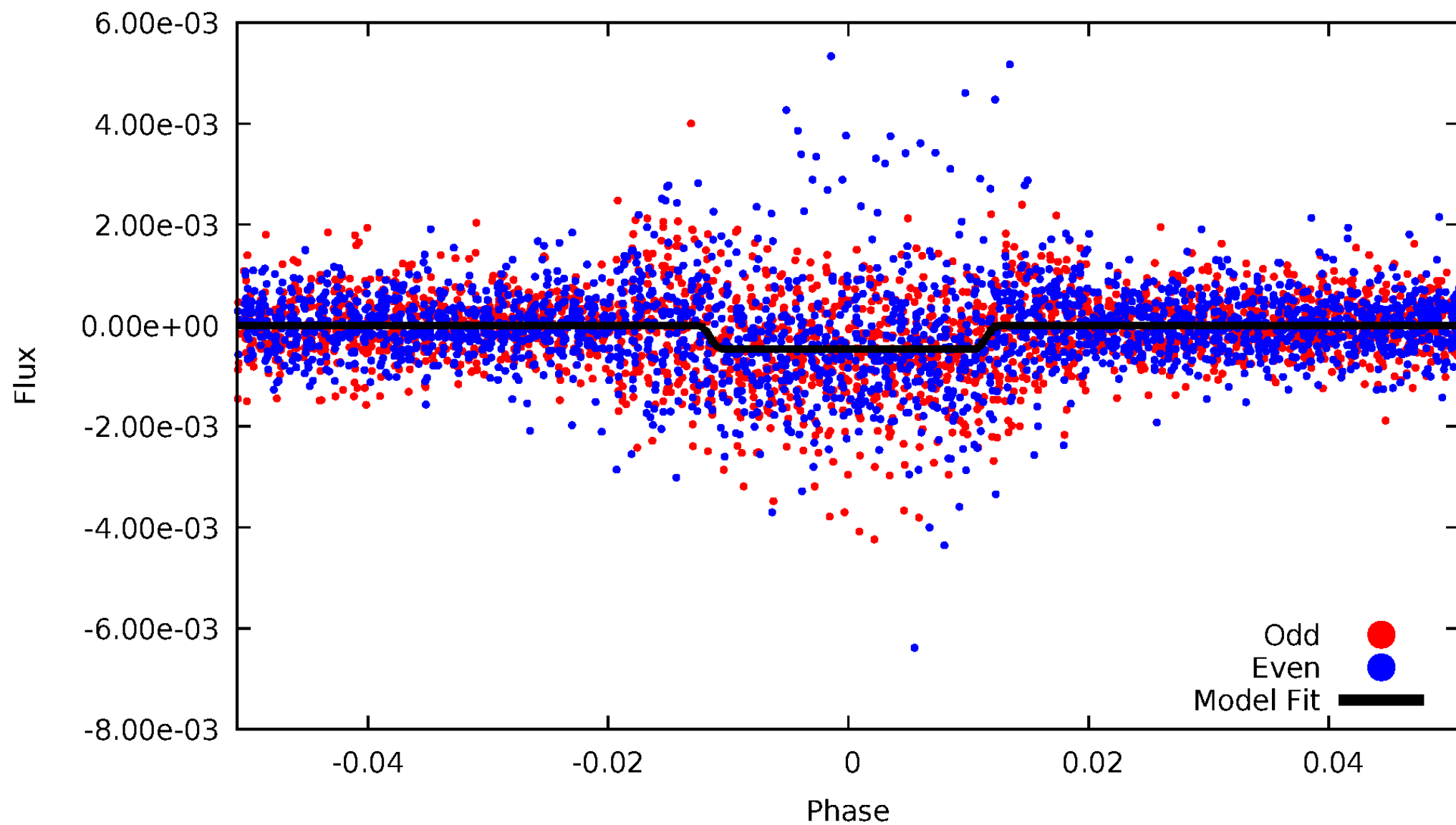
DV Odd/Even

TCE 010485250-02



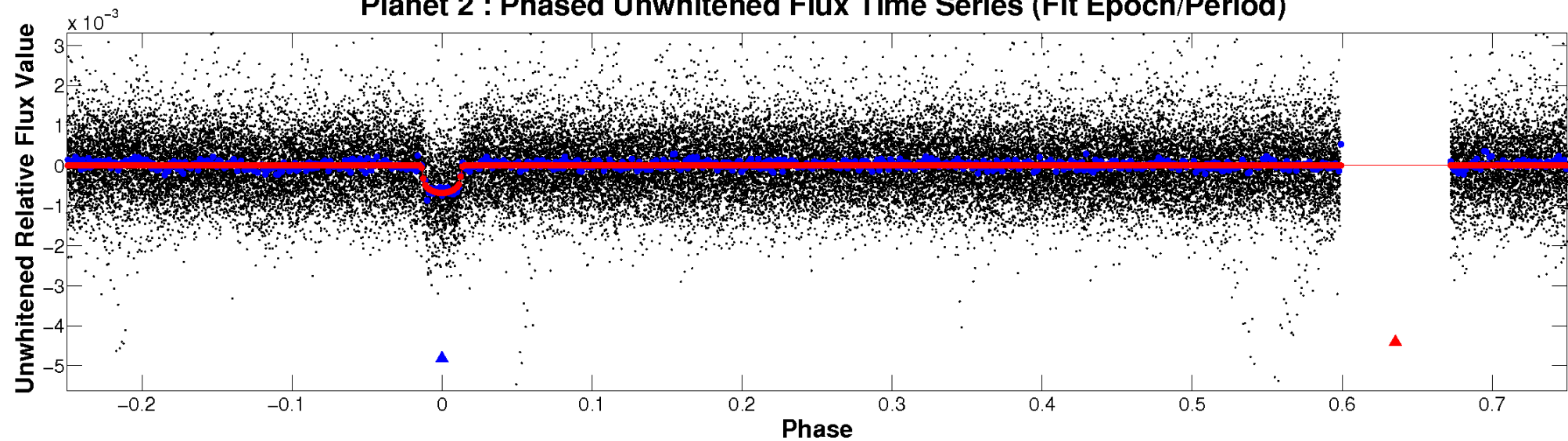
ALT Odd/Even

TCE 010485250-02

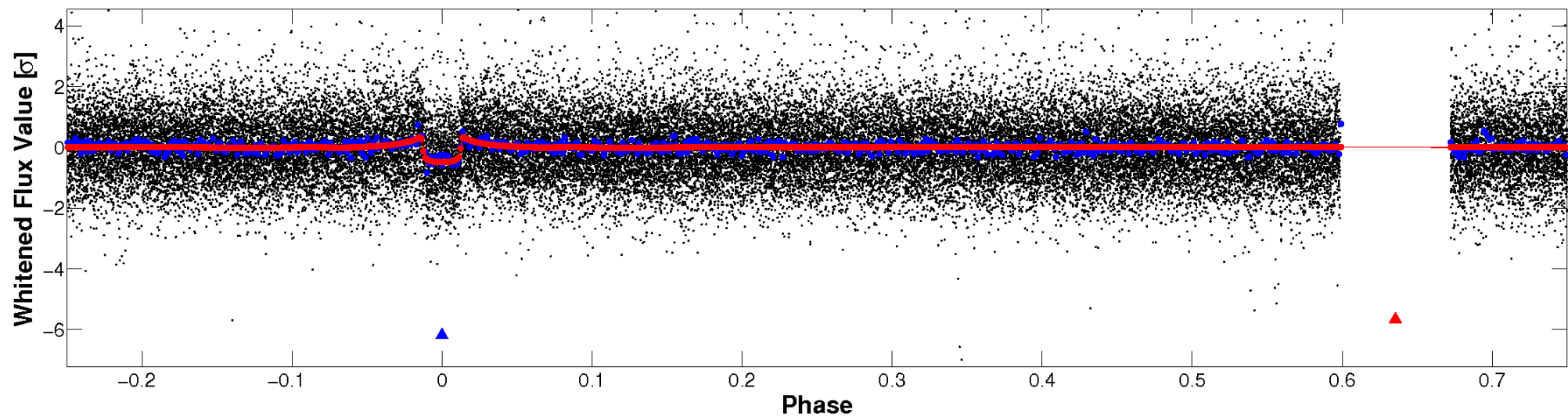


Non-Whitened Vs. Whitened Light Curve

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

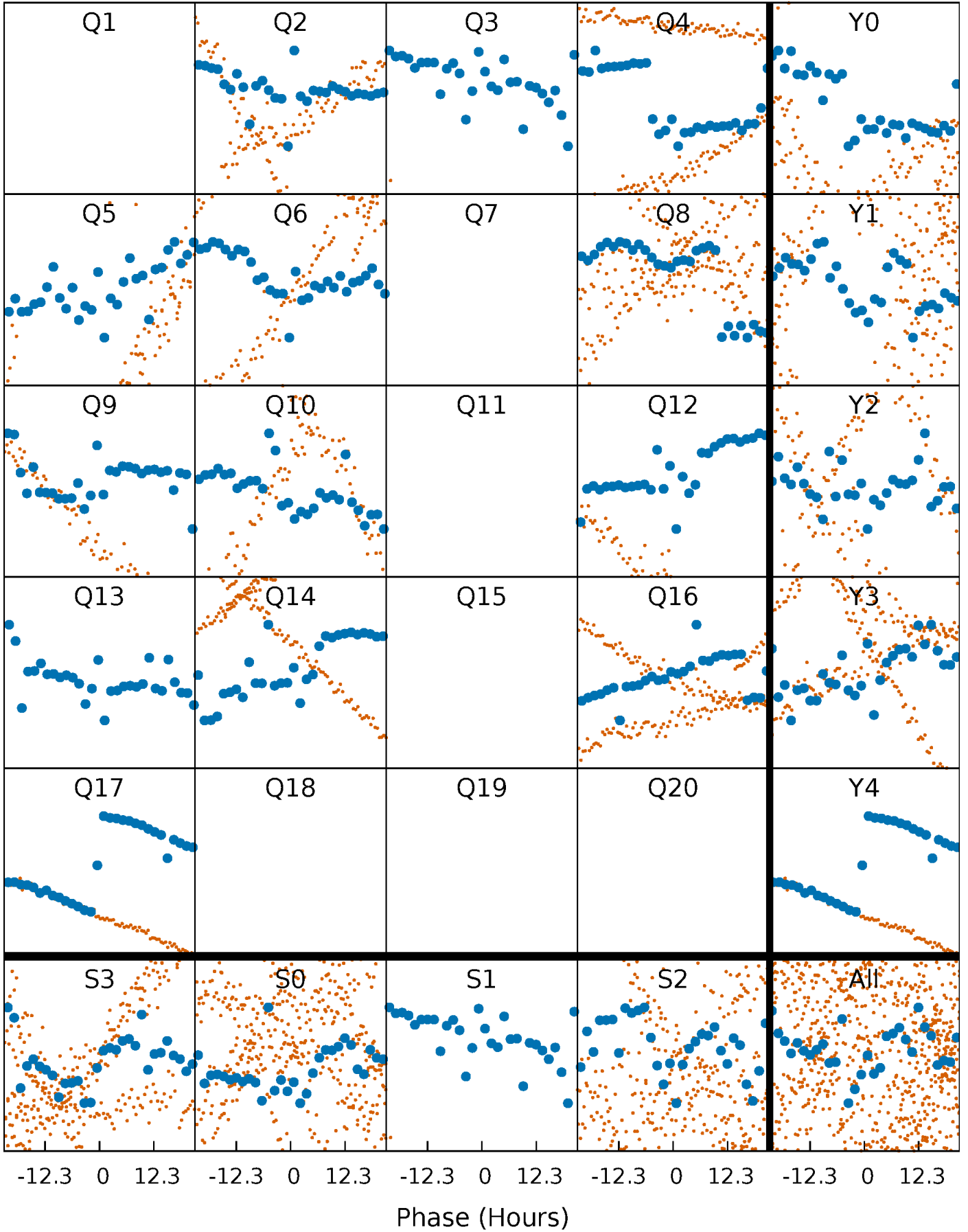


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



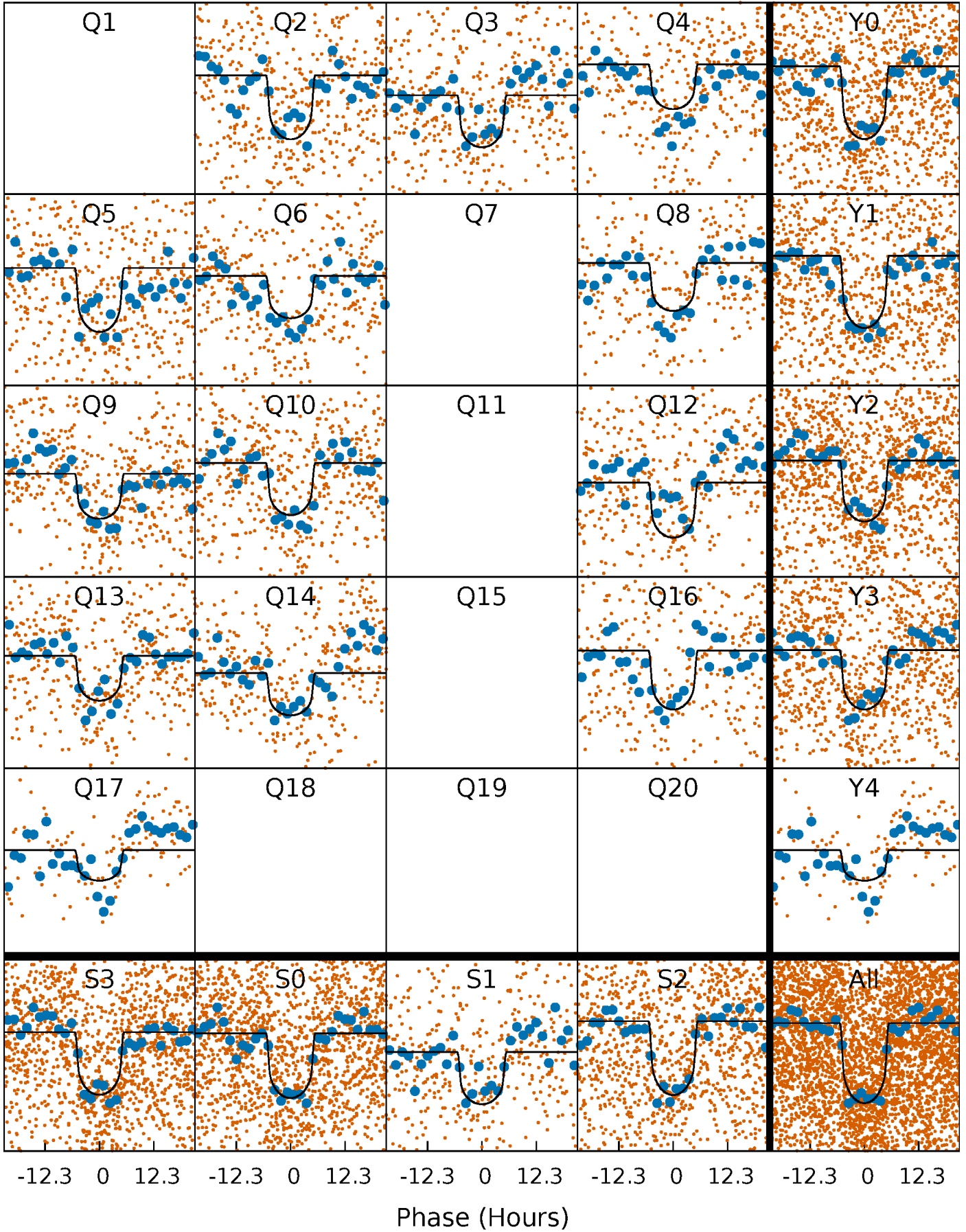
PDC Quarter-Phased Transit Curves

TCE 010485250-02 P= 16.469878 Days $T_0=137.473053$ (BKJD)



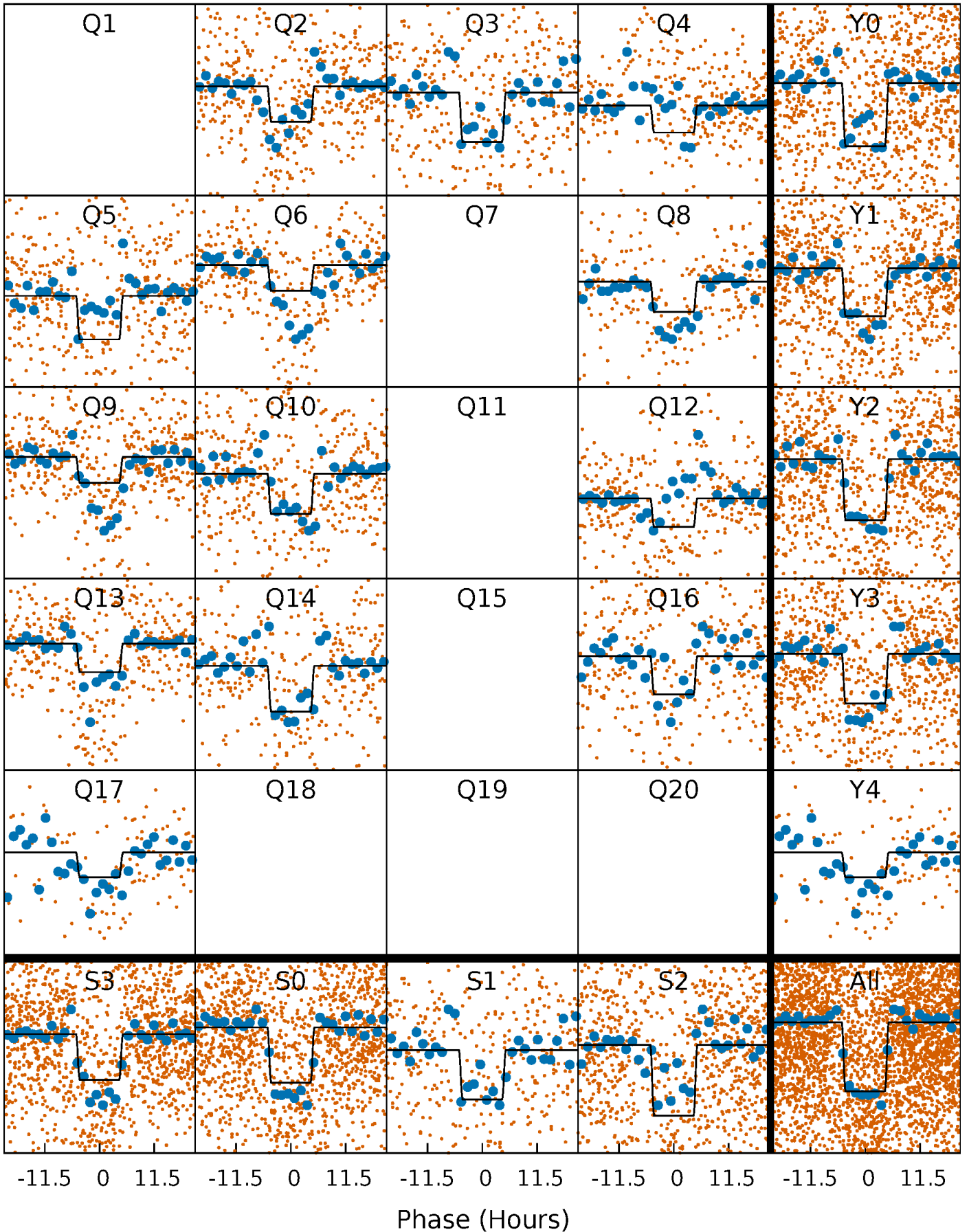
DV Quarter-Phased Transit Curves

TCE 010485250-02 $P = 16.469878$ Days $T_0 = 137.473053$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

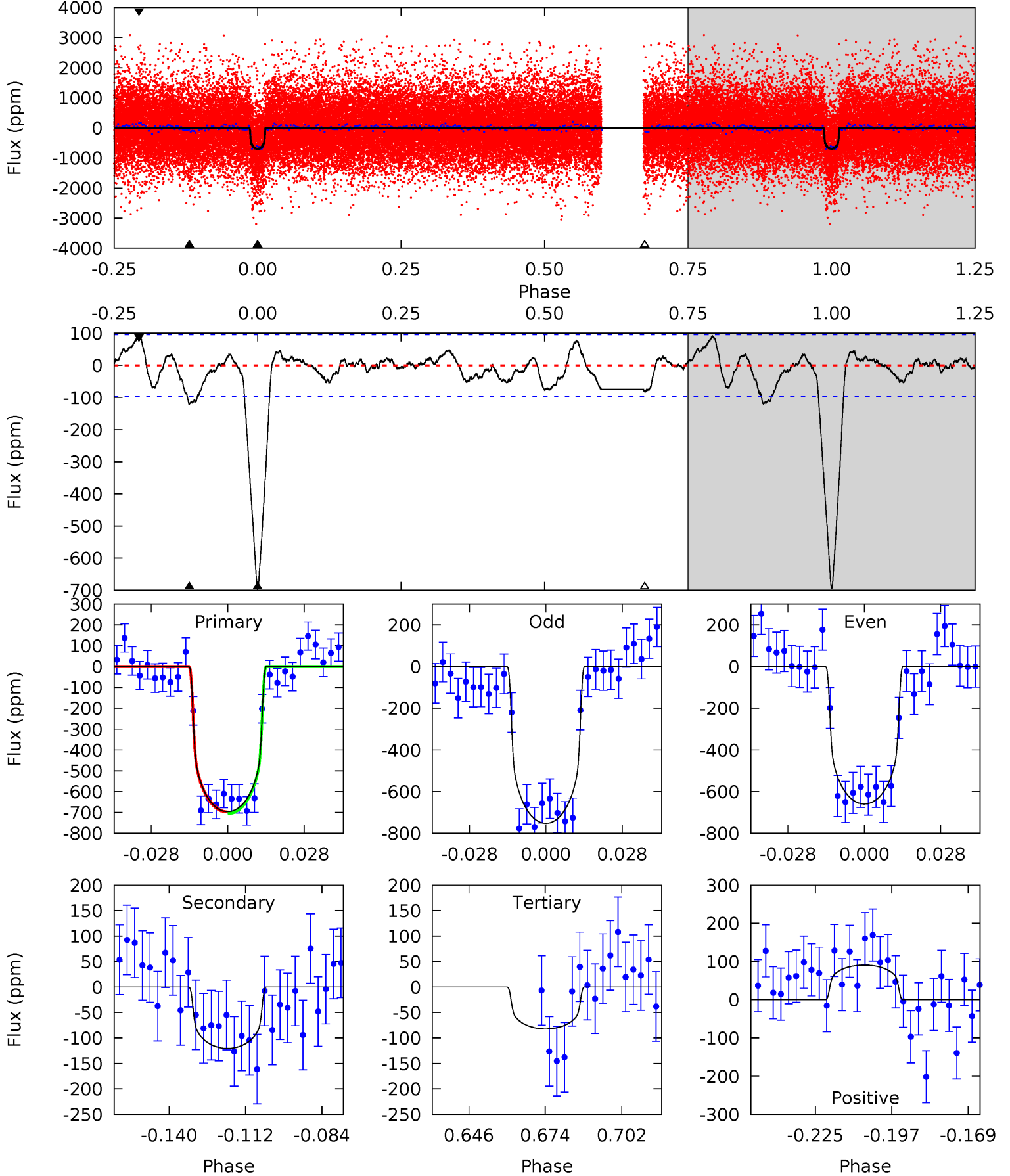
TCE 010485250-02 $P = 16.469301$ Days $T_0 = 137.490254$ (BKJD)



DV Model-Shift Uniqueness Test

010485250-02, P = 16.469878 Days, E = 137.473053 Days

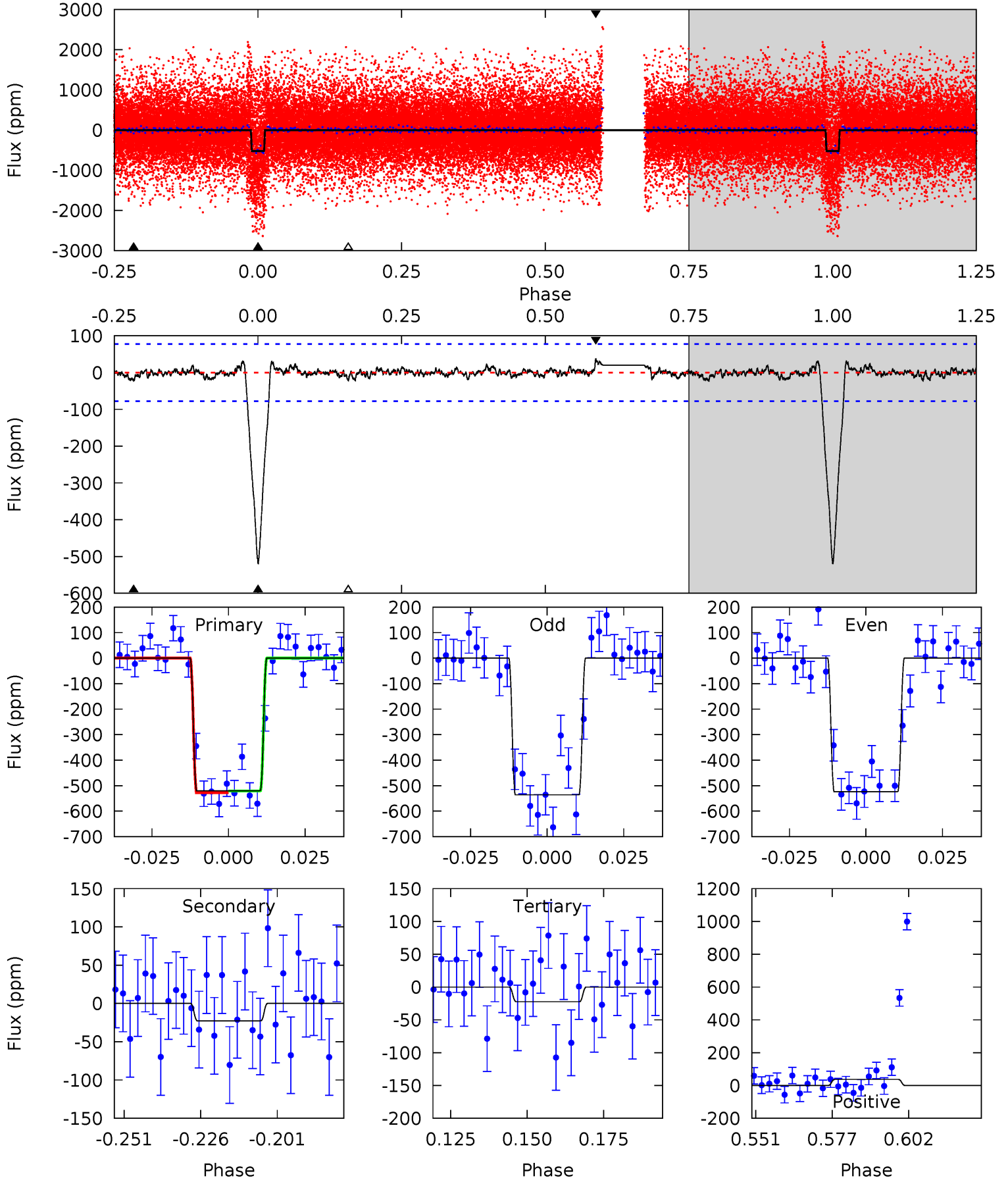
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
34.7	6.00	4.09	4.52	4.82	2.20	1.67	30.6	30.1	1.91	1.48	2.32	0.98	0.12	0.20



Alt Model-Shift Uniqueness Test

010485250-02, P = 16.469301 Days, E = 137.490254 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
32.4	1.41	1.39	2.33	4.85	2.24	0.52	31.0	30.0	0.02	-0.92	0.38	0.98	0.07	0.20



Stellar Parameters For KIC 010485250

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5152^{+168}_{-153}	$4.517^{+0.088}_{-0.072}$	$-0.200^{+0.300}_{-0.300}$	$0.786^{+0.088}_{-0.088}$	$0.741^{+0.106}_{-0.057}$	$2.149^{+0.773}_{-0.479}$
	+3%/-3%	+2%/-2%	+150%/-150%	+11%/-11%	+14%/-8%	+36%/-22%
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 010485250-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-121 ± 20	$2.26^{+0.32}_{-0.31}$	831^{+36}_{-34}	3707^{+201}_{-194}	172^{+63}_{-45}
Alt.	-23 ± 16	$1.83^{+0.32}_{-0.29}$	829^{+36}_{-40}	3041^{+303}_{-539}	48^{+44}_{-36}

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 $A_{obs} \gg 1.0$

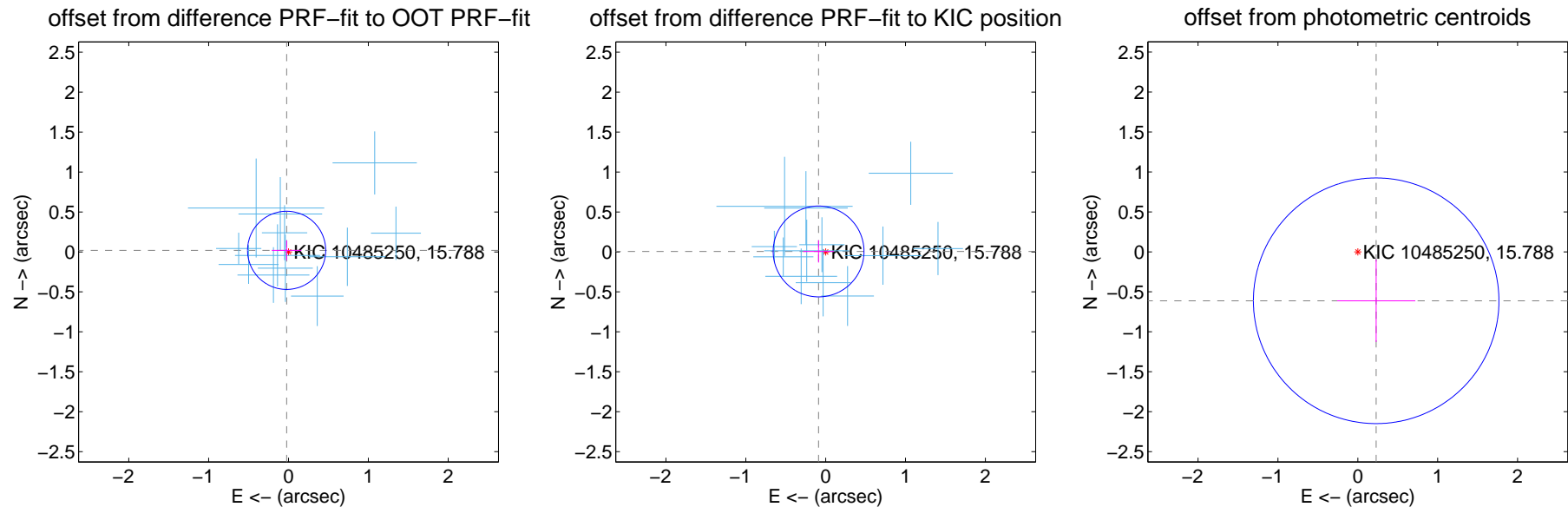
DV Centroid Data

Supplemental centroid analysis for 010485250-02. Kepler magnitude: 15.79. Transit SNR 17.00

There are 12 quarters with good PRF difference image offsets

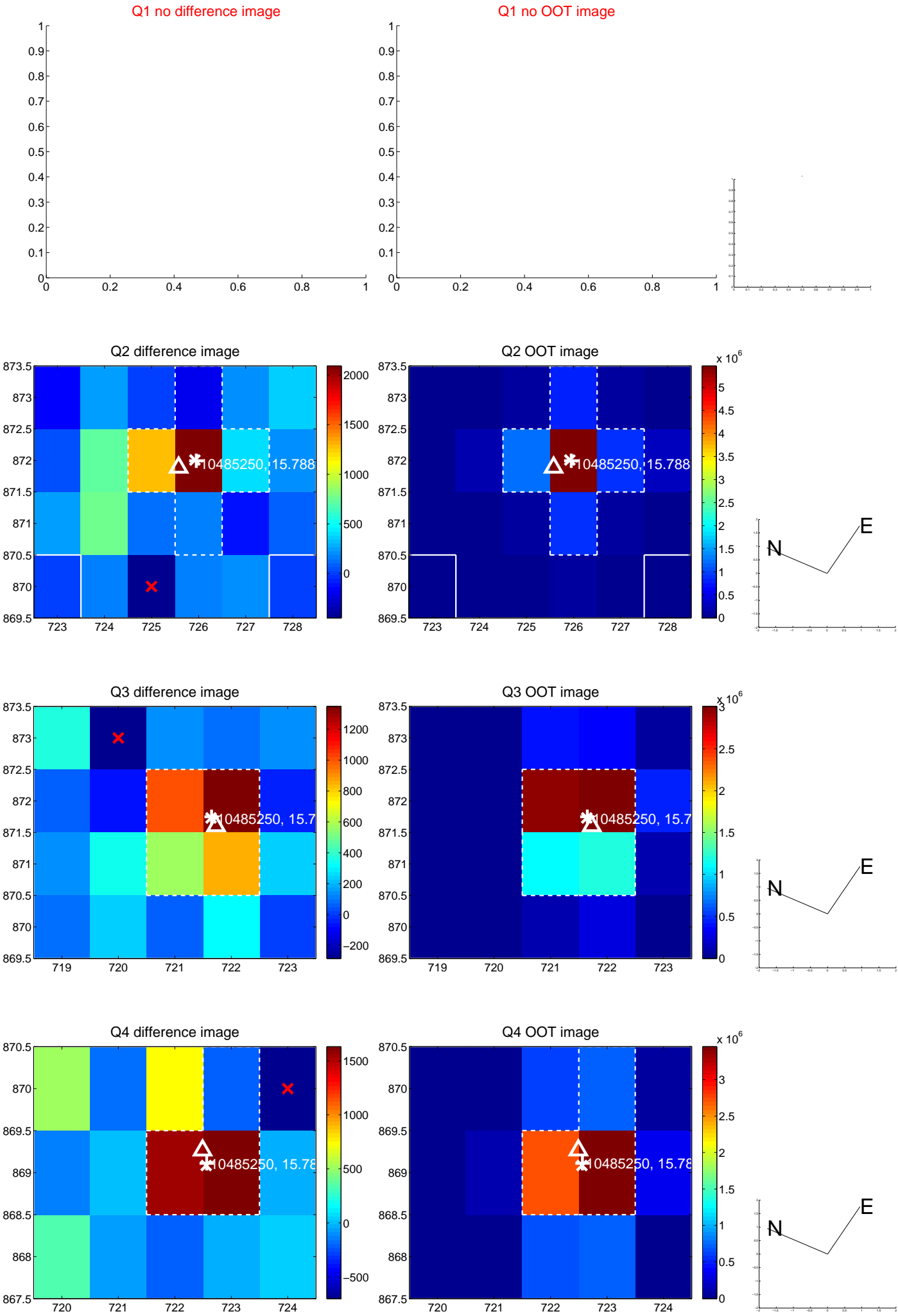
The direct PRF centroid is offset from the target star catalog position by about 0.16 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.031 ± 0.163	0.19	0.023 ± 0.186	0.020 ± 0.124
PRF-fit source offset from KIC position	0.089 ± 0.190	0.47	0.088 ± 0.192	0.006 ± 0.139
photometric centroid source offset	0.65 ± 0.51	1.28	-0.23 ± 0.49	-0.61 ± 0.52

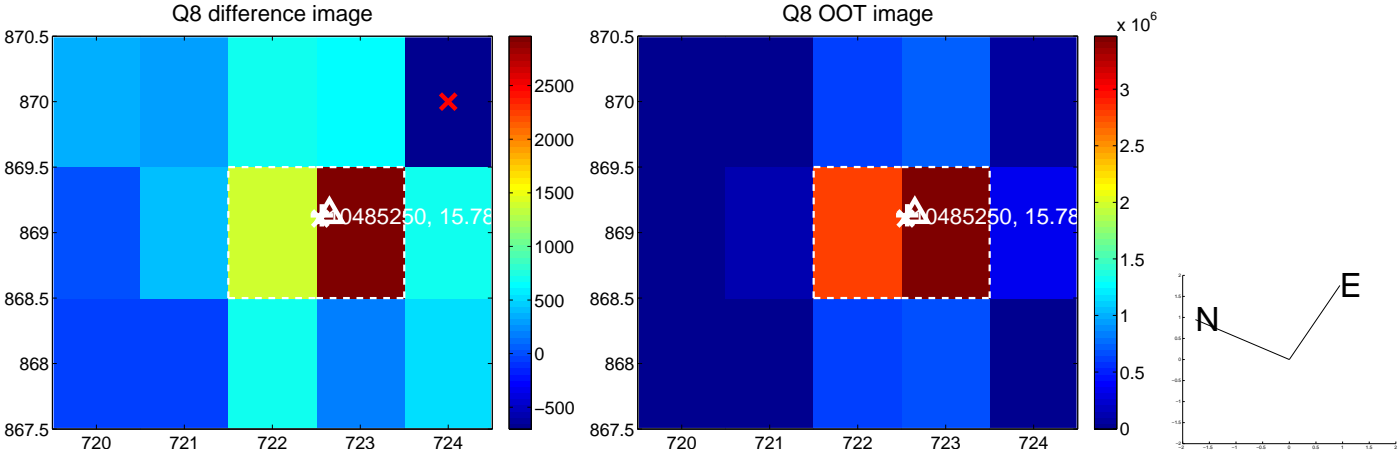
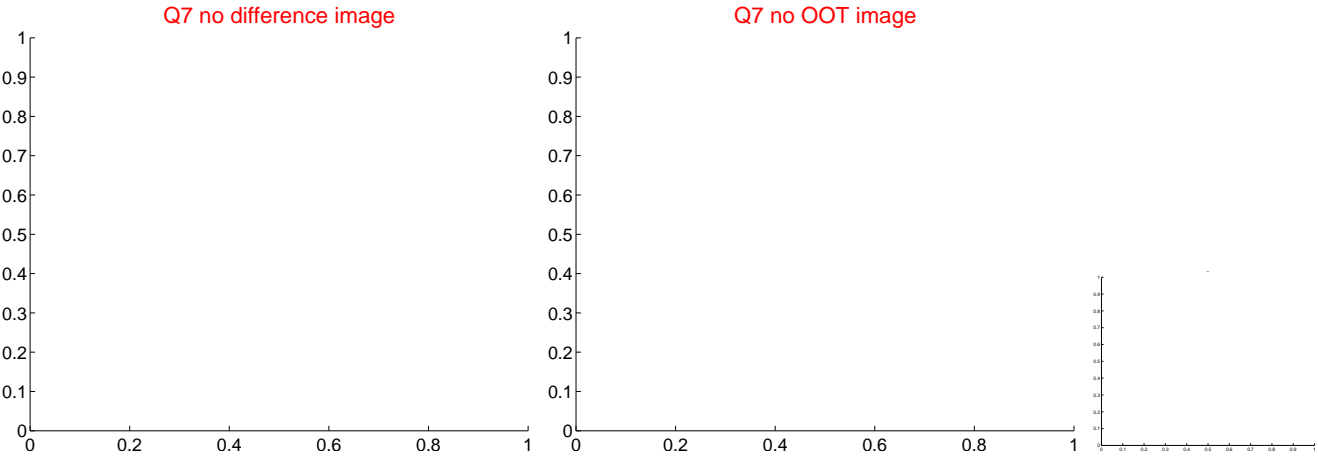
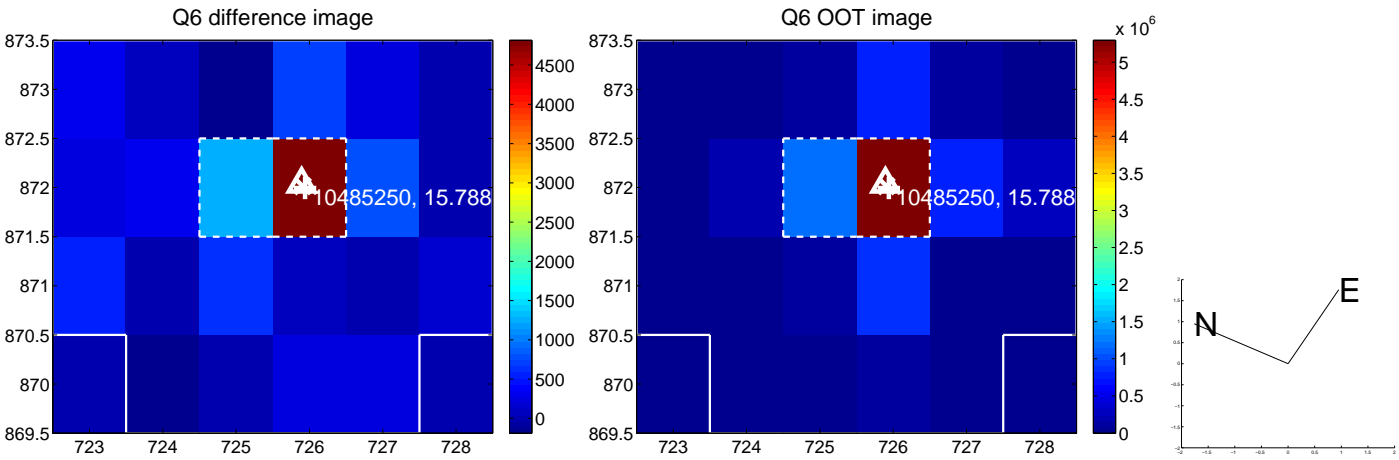
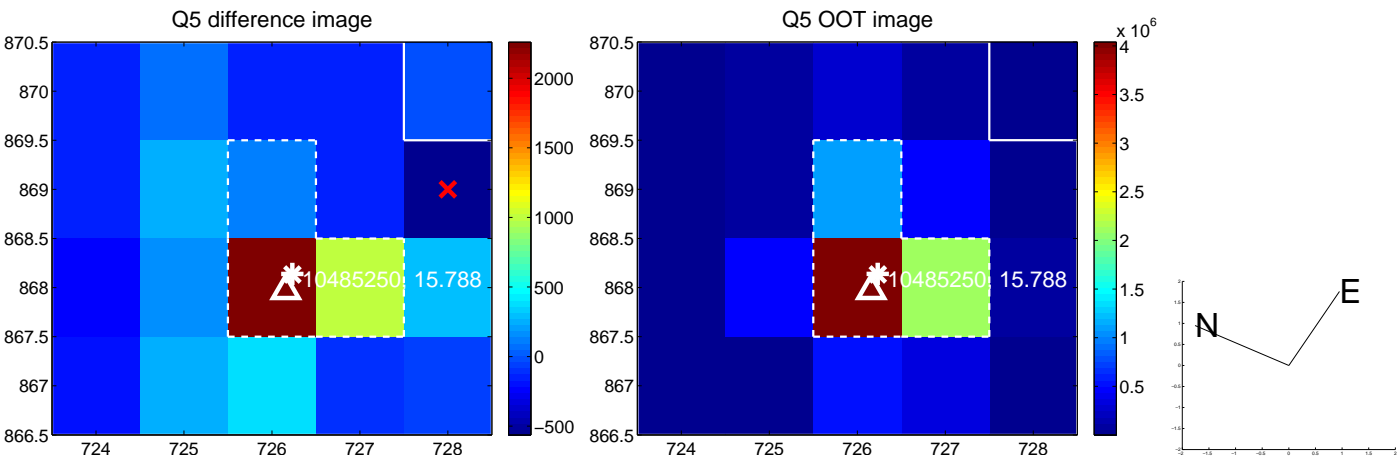


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

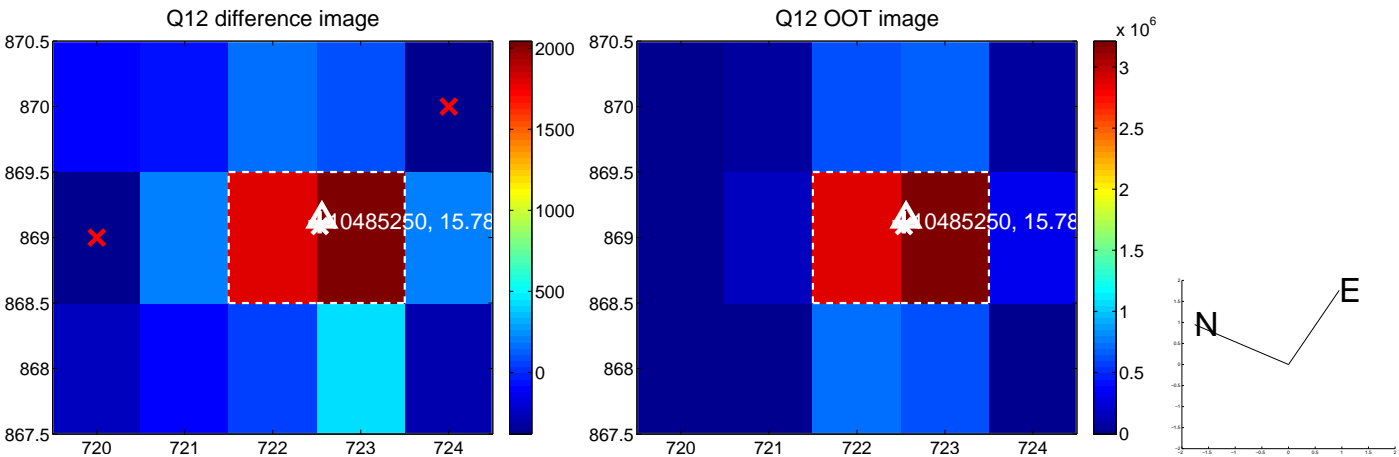
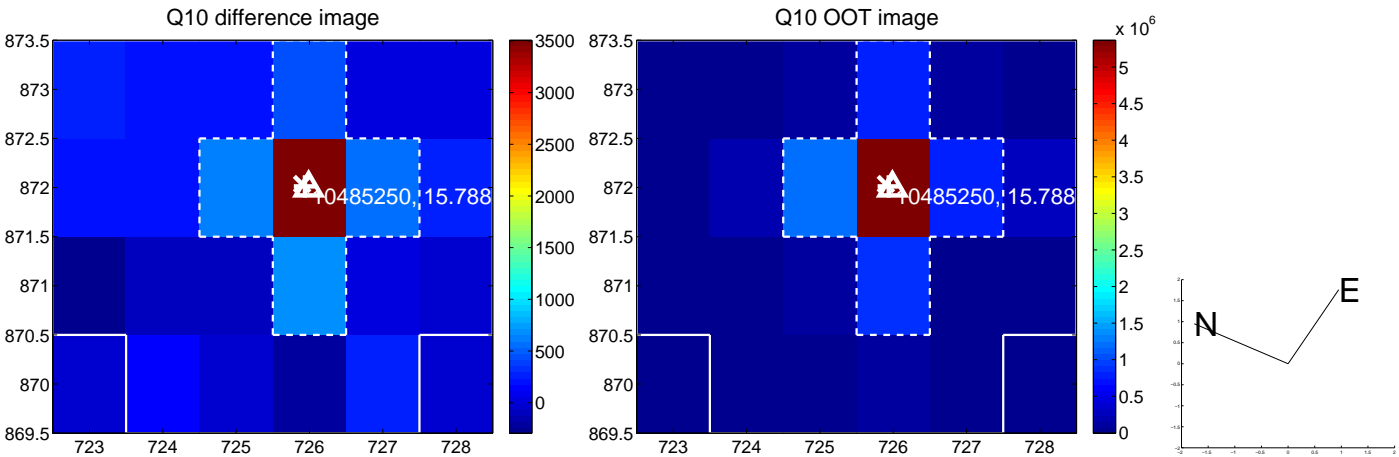
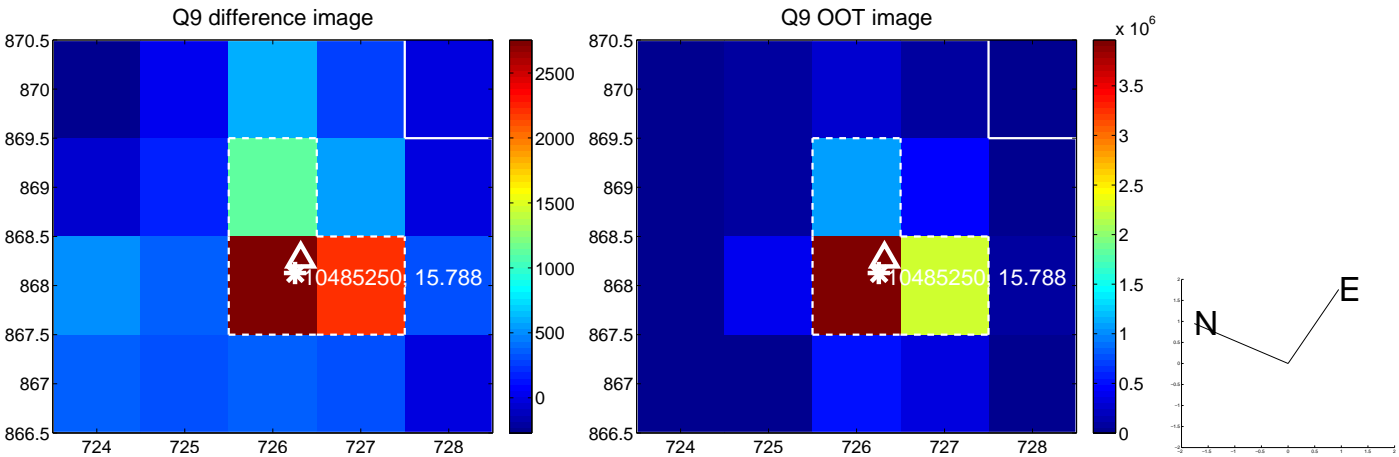
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



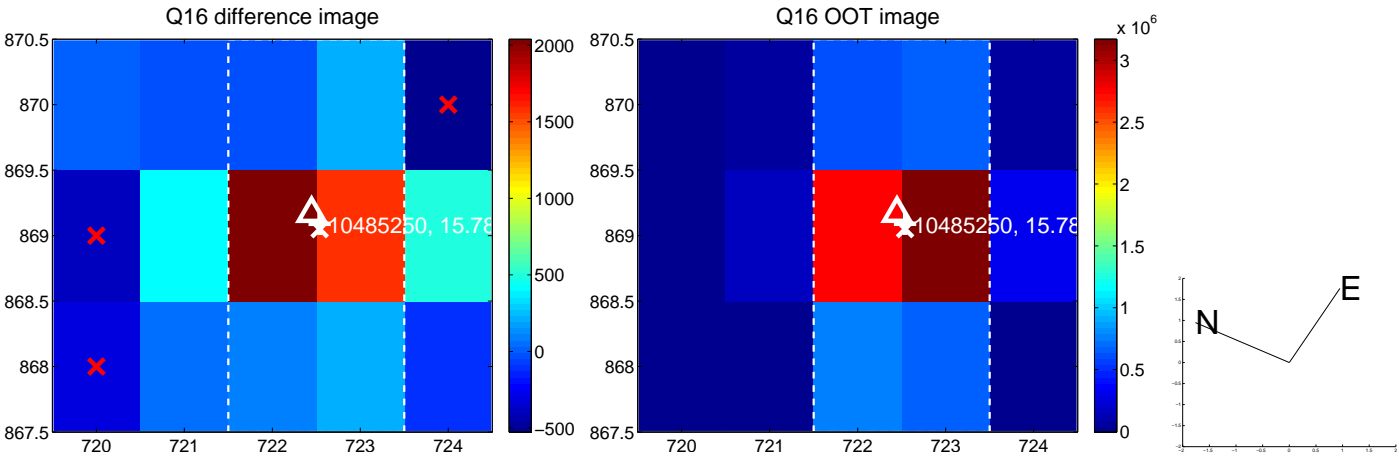
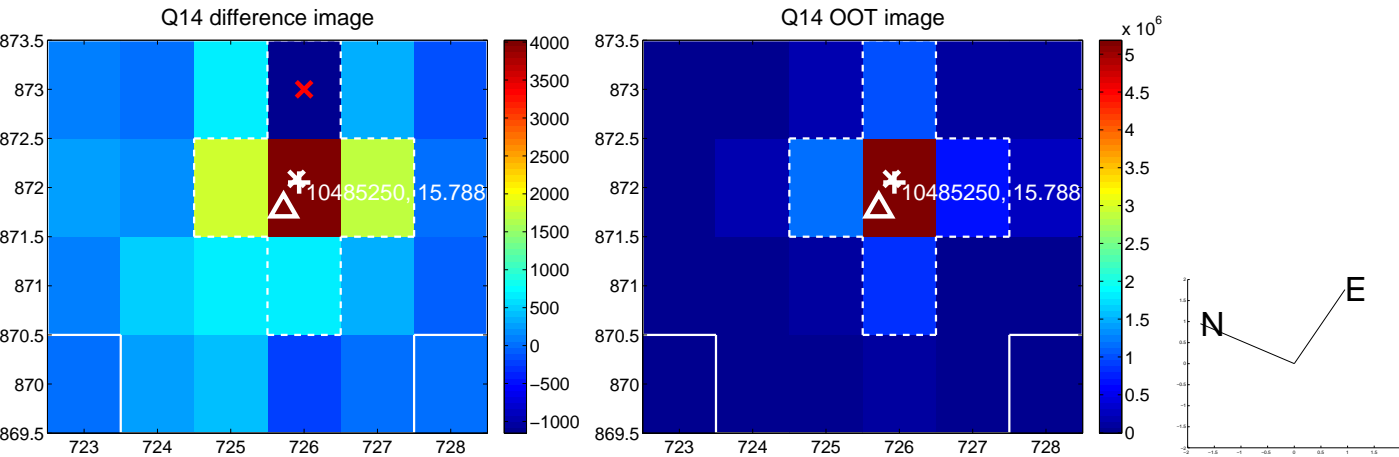
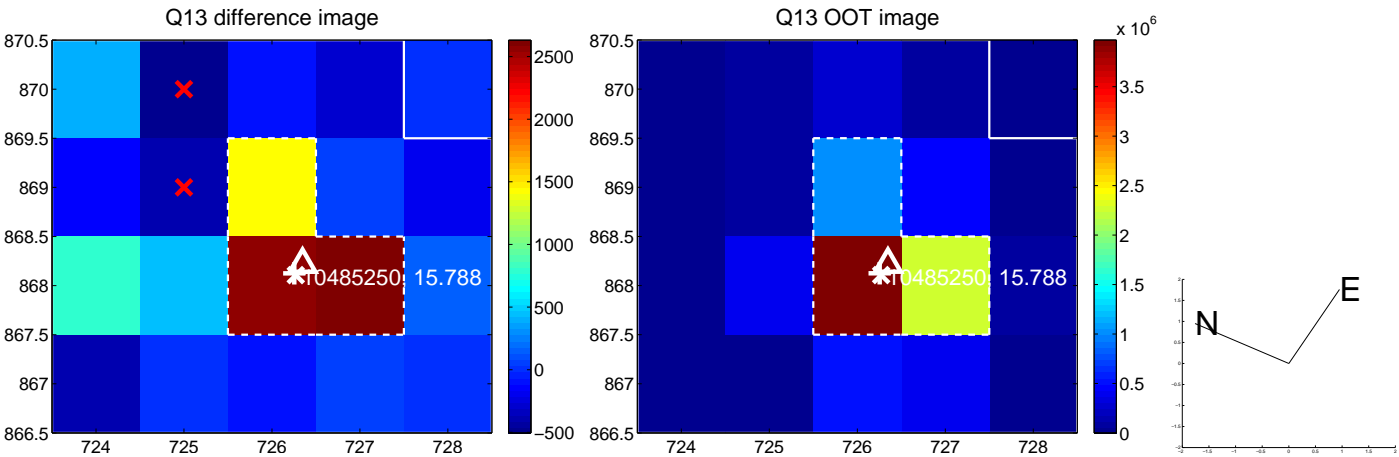
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



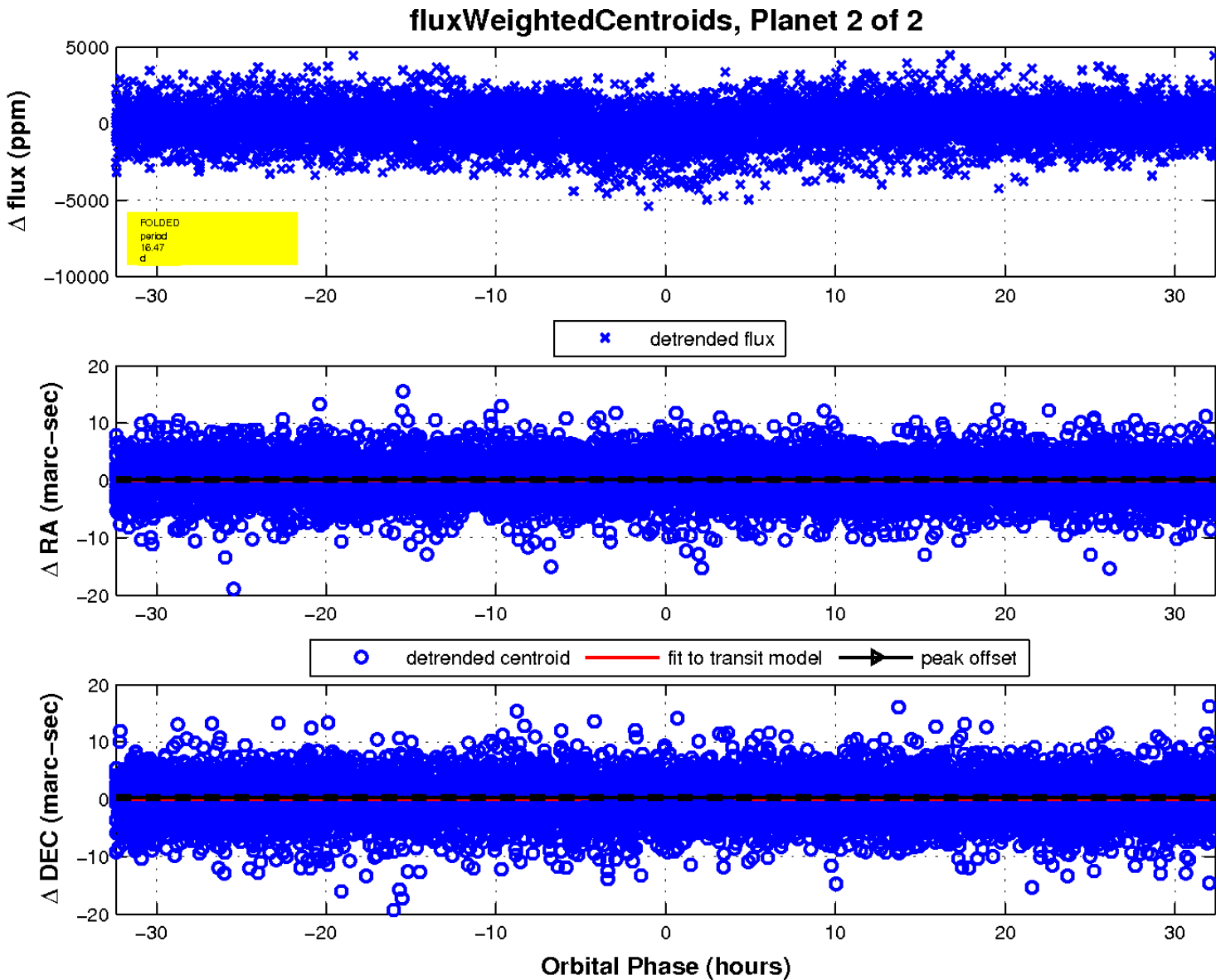
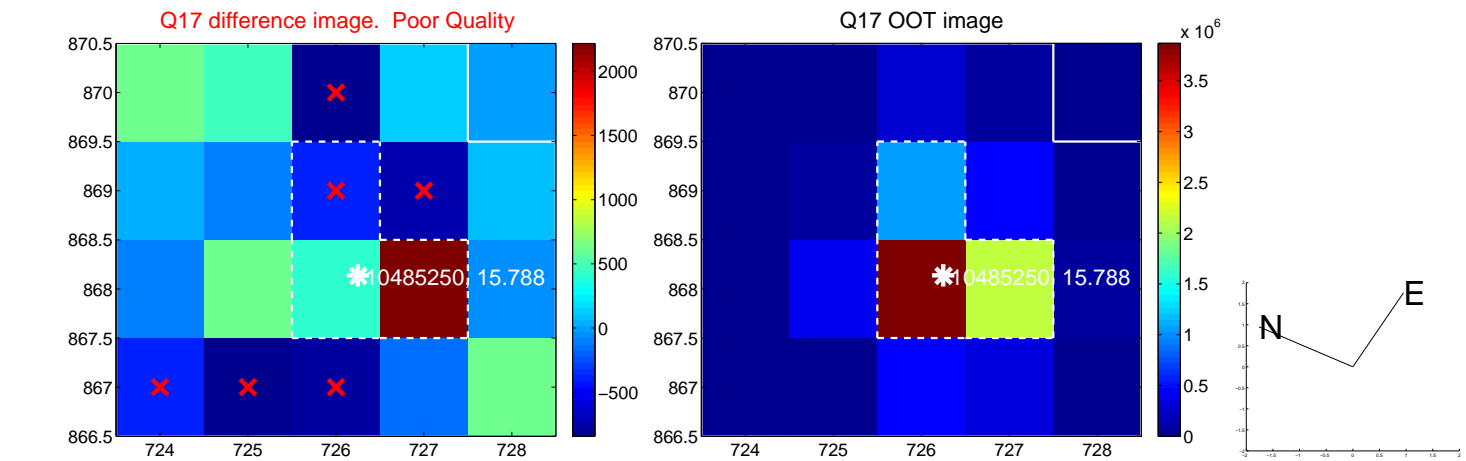
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UKIRT Image

Declination

