

KIC 007678434

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})
007678434-01	OBS	0892.01	10.371663	141.504444	1249.6	3.113	51.2	55.5	0.89	5121	3.36	63.80
007678434-02	OBS	0892.02	3.969987	133.779950	279.4	1.327	12.7	14.9	0.89	5121	1.67	229.55

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007678434-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT
007678434-02	OBS	PC	1.00	0	0	0	0	NO_COMMENT

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 007678434-01

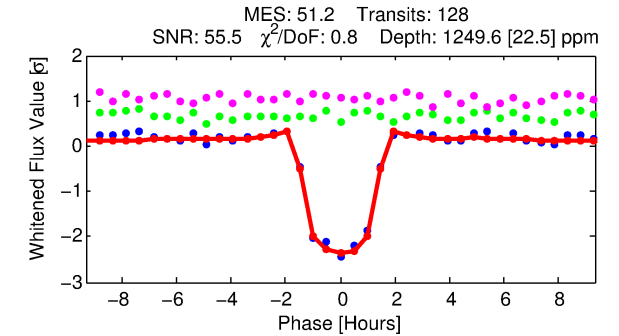
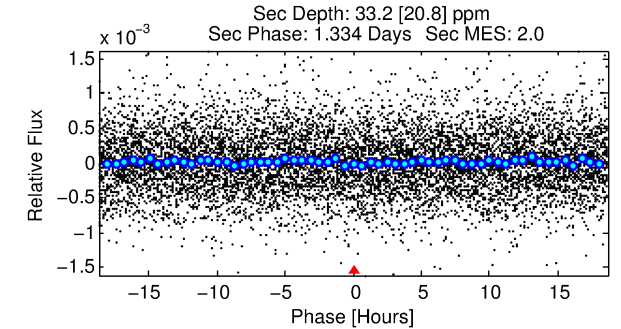
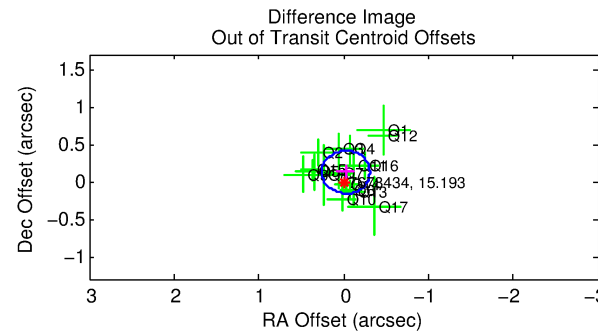
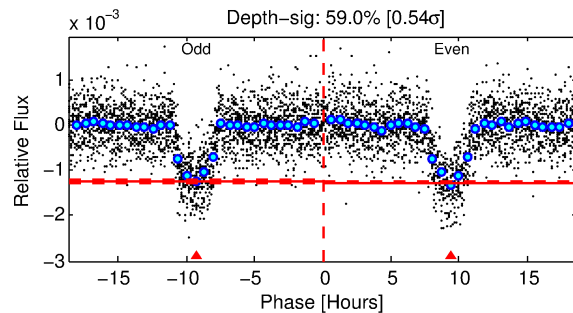
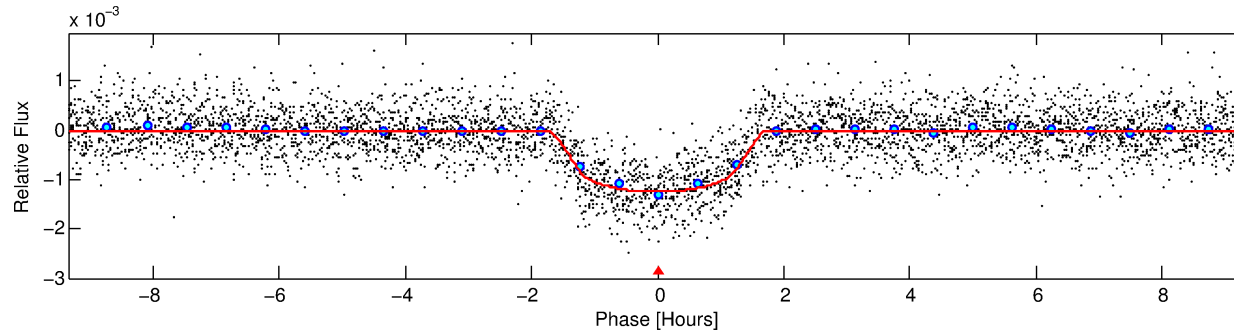
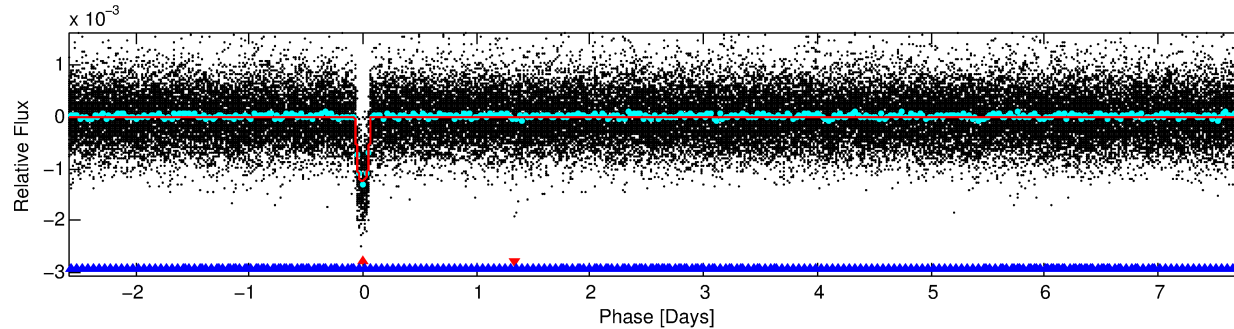
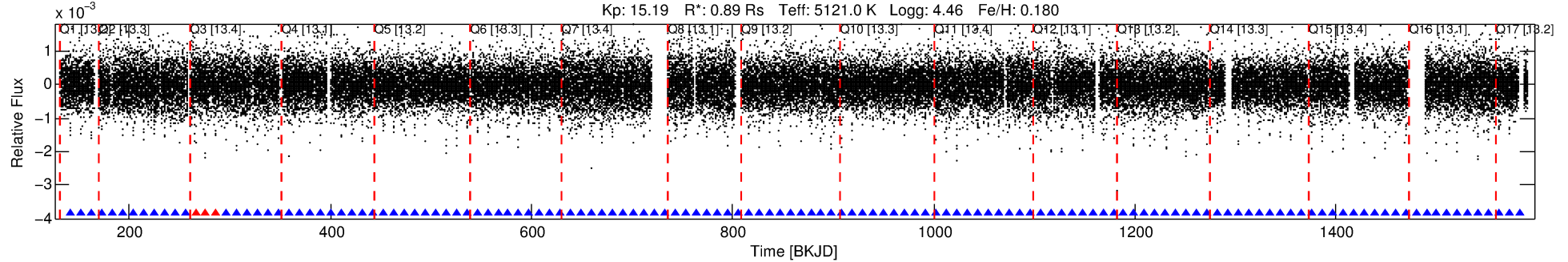
No Significant Match Found

DV One-Page Summary

KIC: 7678434 Candidate: 1 of 2 Period: 10.372 d

KOI: K00892.01 Corr: 0.989

Kp: 15.19 R*: 0.89 Rs Teff: 5121.0 K Logg: 4.46 Fe/H: 0.180



DV Fit Results:

Period = 10.37166 [0.00001] d
Epoch = 141.5044 [0.0011] BKJD
Rp/R* = 0.0347 [0.0066]
a/R* = 19.28 [12.73]
b = 0.71 [0.48]
Seff = 63.80 [10.51]
Teq = 721 [30] K
Rp = 3.36 [0.70] Re
a = 0.0873 [0.0079] AU
Ag = 12.34 [9.20] [1.23σ]
Teffp = 2088 [383] K [3.56σ]

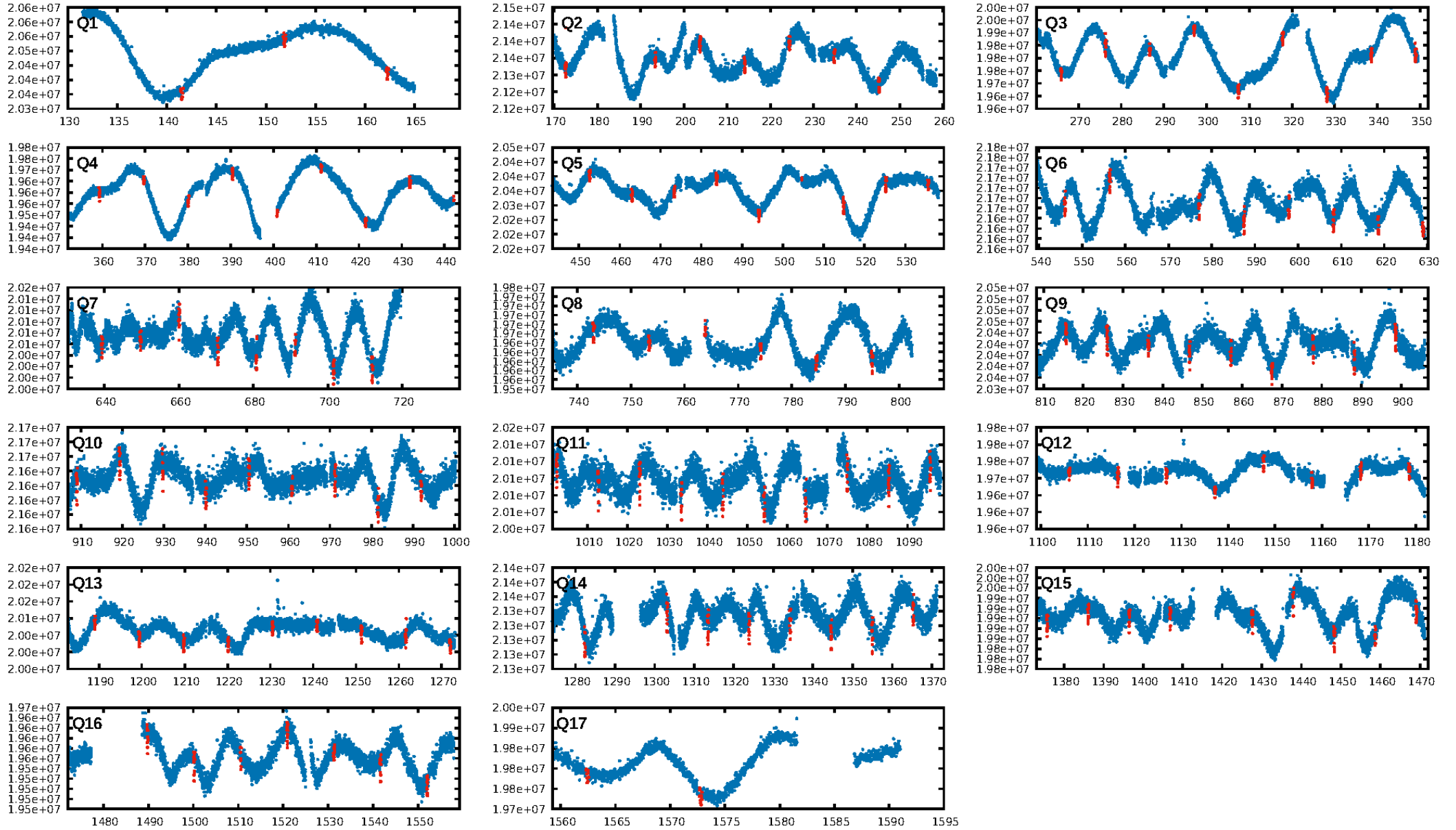
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [45.40σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 94.7%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 0.98 [120/123]
GhostDiagnostic-chr: 5.664
Centroid-sig: 0.3%
Centroid-so: 0.234 arcsec [1.09σ]
OotOffset-rm: 0.129 arcsec [1.36σ]
KicOffset-rm: 0.075 arcsec [0.76σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 1.00 [17/17]
DiffImageOverlap-fno: 1.00 [17/17]

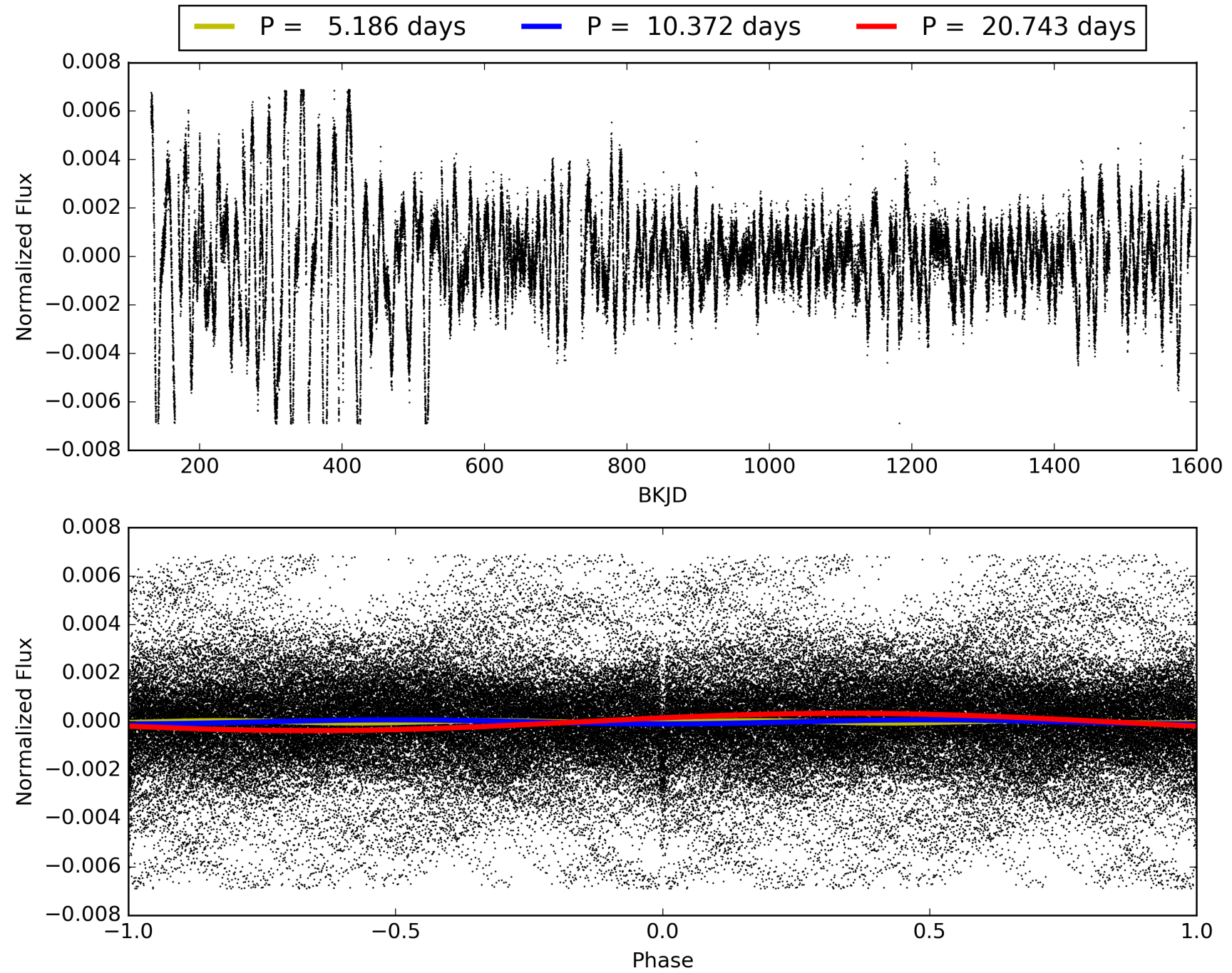
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 19:11:48 Z

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

TCE 007678434-01, PDC Light Curves

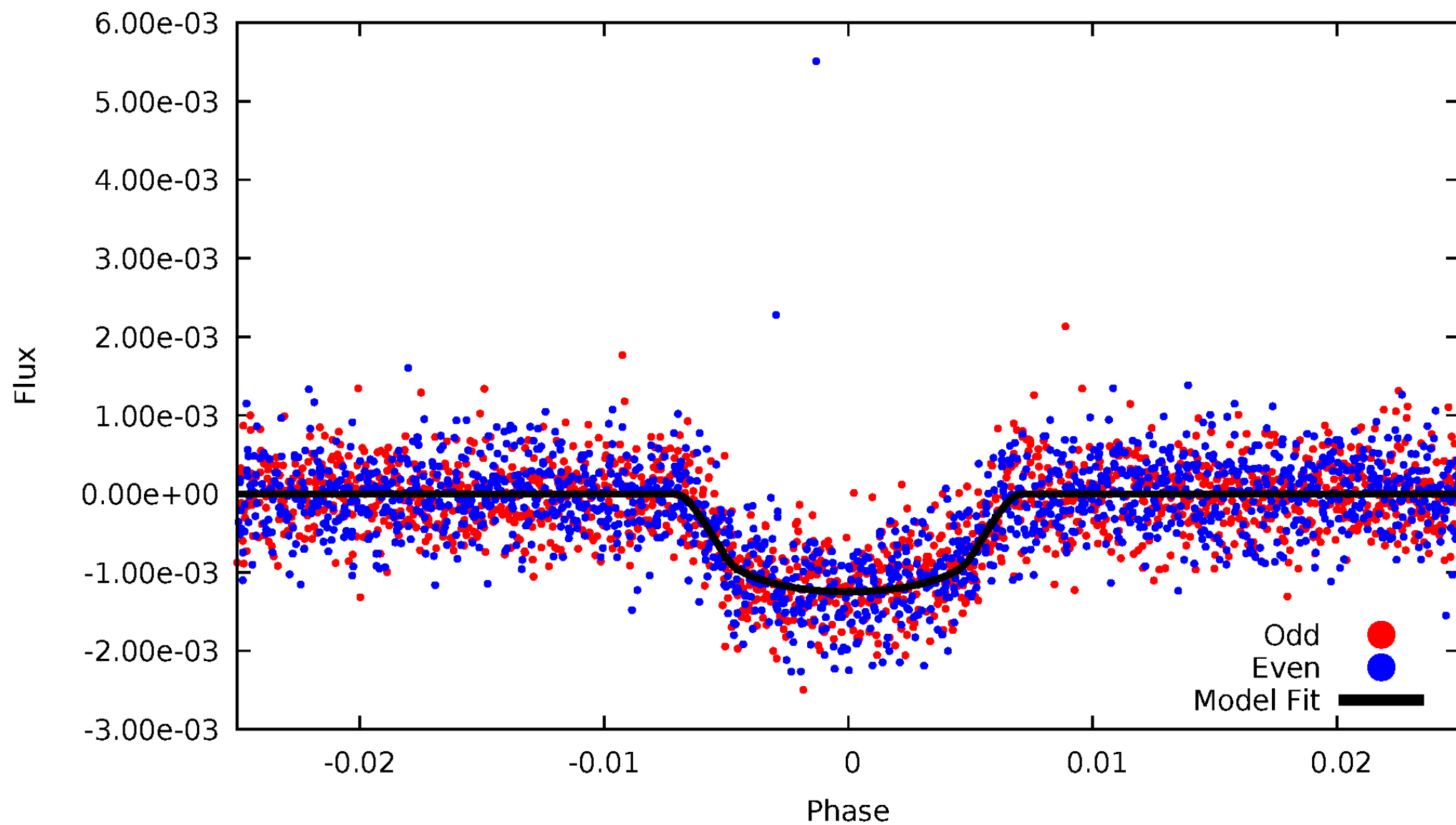


TCE 007678434-01



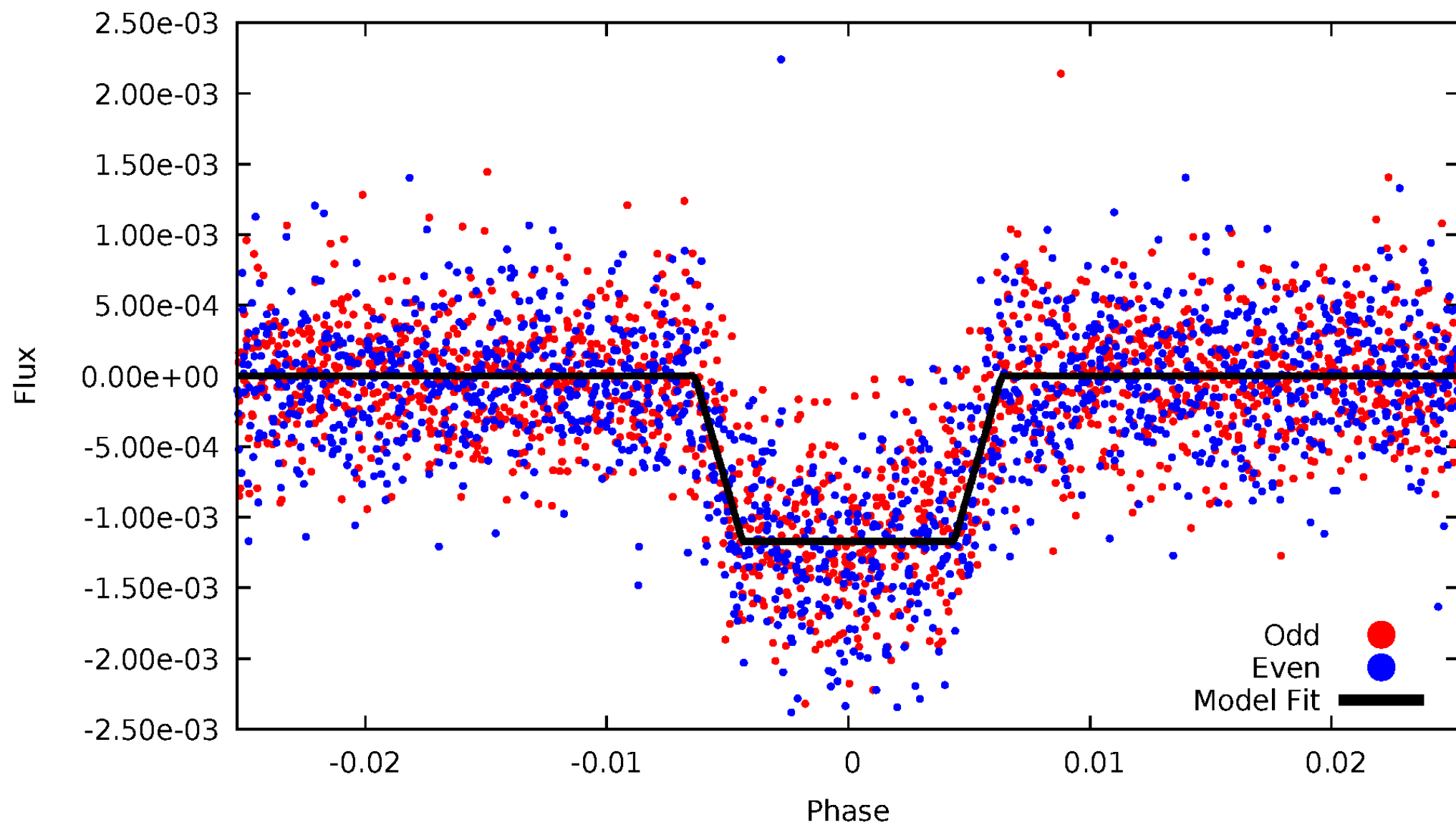
DV Odd/Even

TCE 007678434-01



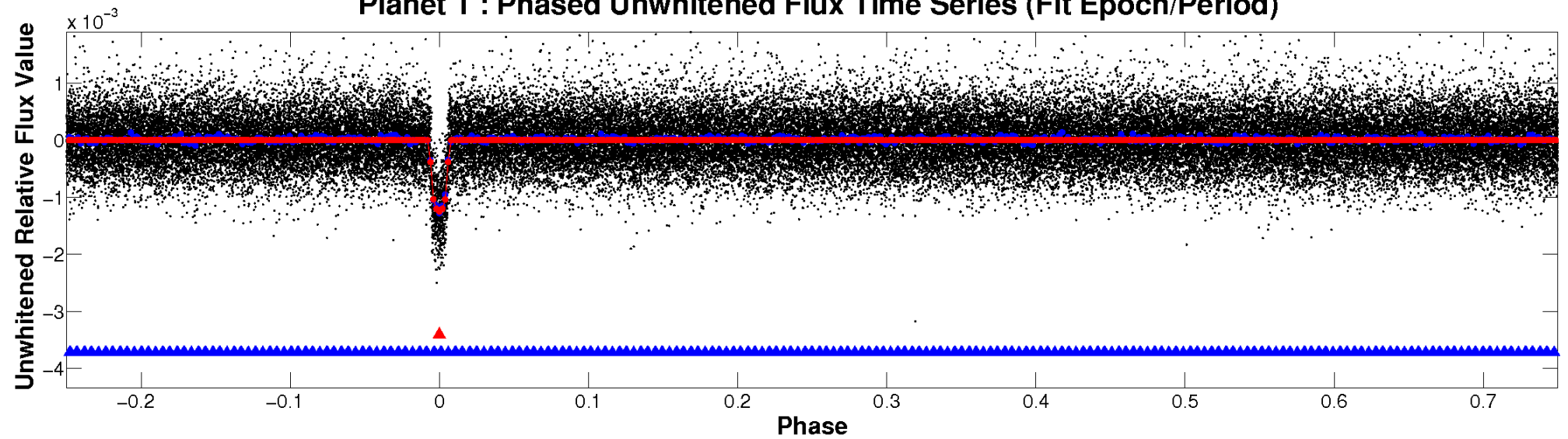
ALT Odd/Even

TCE 007678434-01

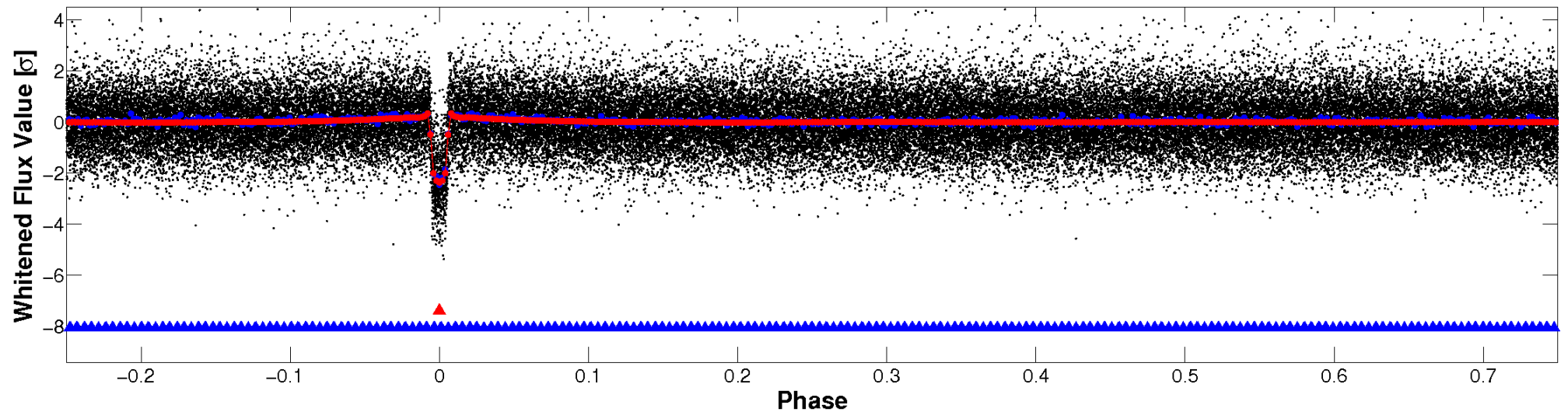


Non-Whitened Vs. Whitened Light Curve

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

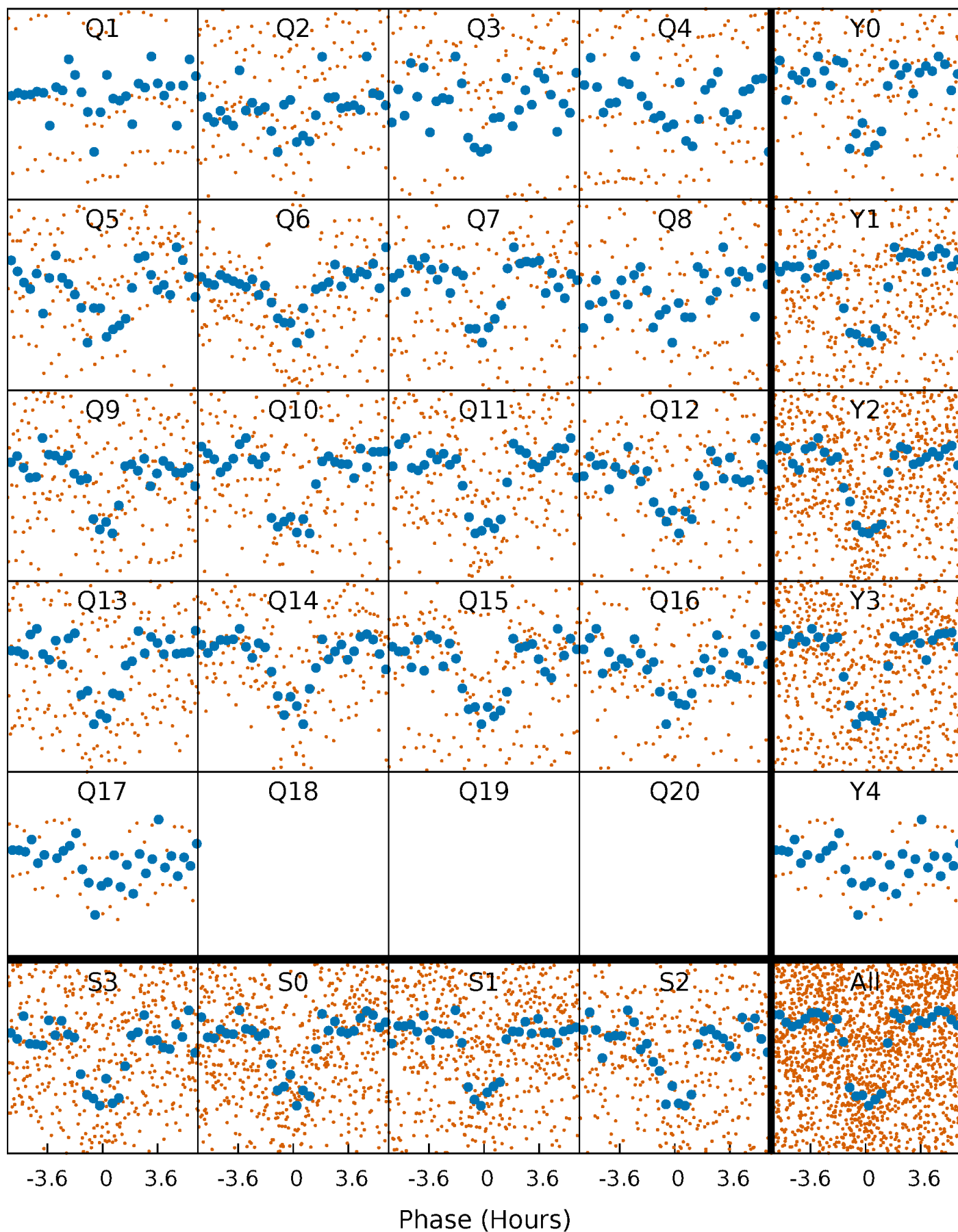


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



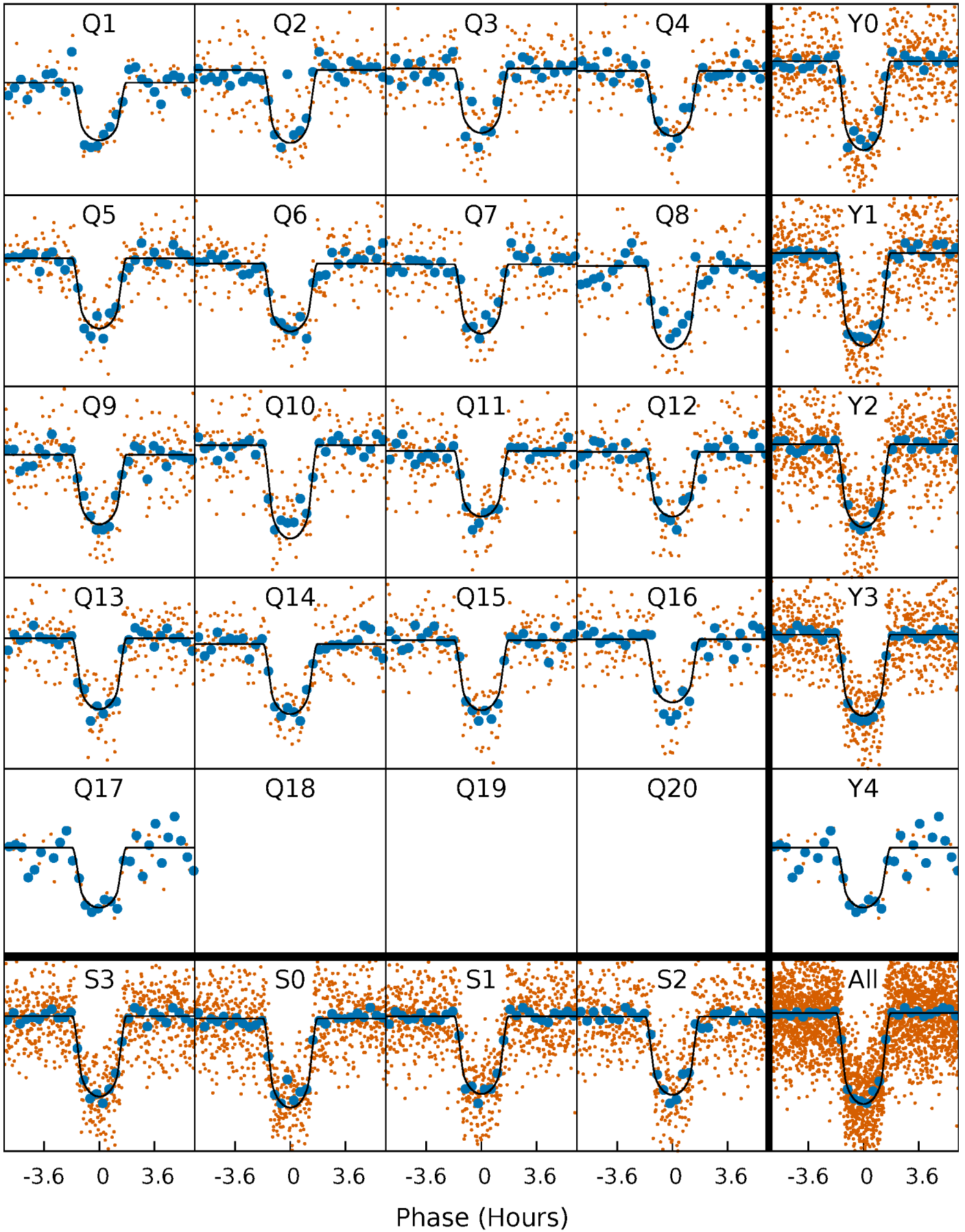
PDC Quarter-Phased Transit Curves

TCE 007678434-01 P= 10.371663 Days $T_0=141.504444$ (BKJD)



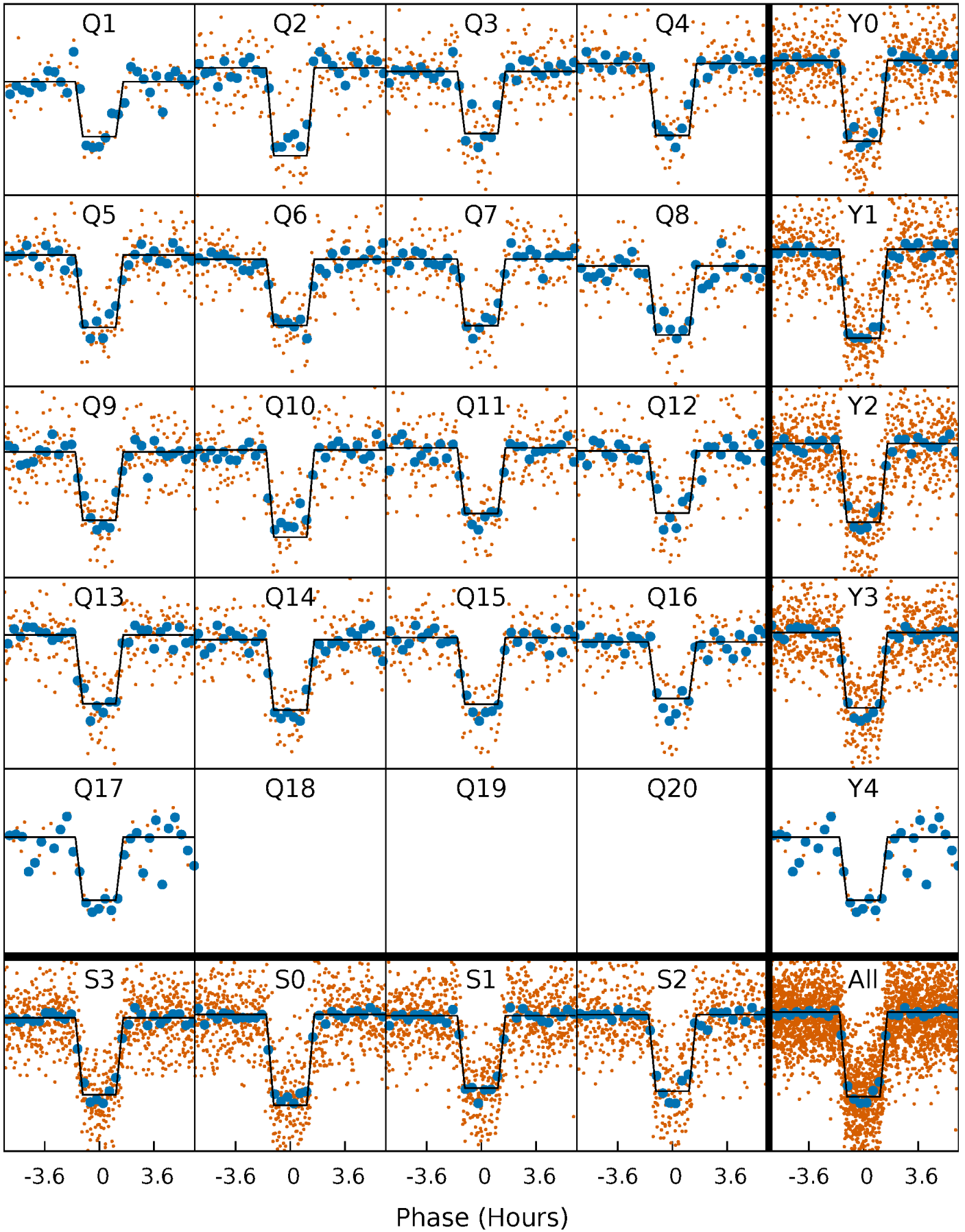
DV Quarter-Phased Transit Curves

TCE 007678434-01 P= 10.371663 Days $T_0=141.504444$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

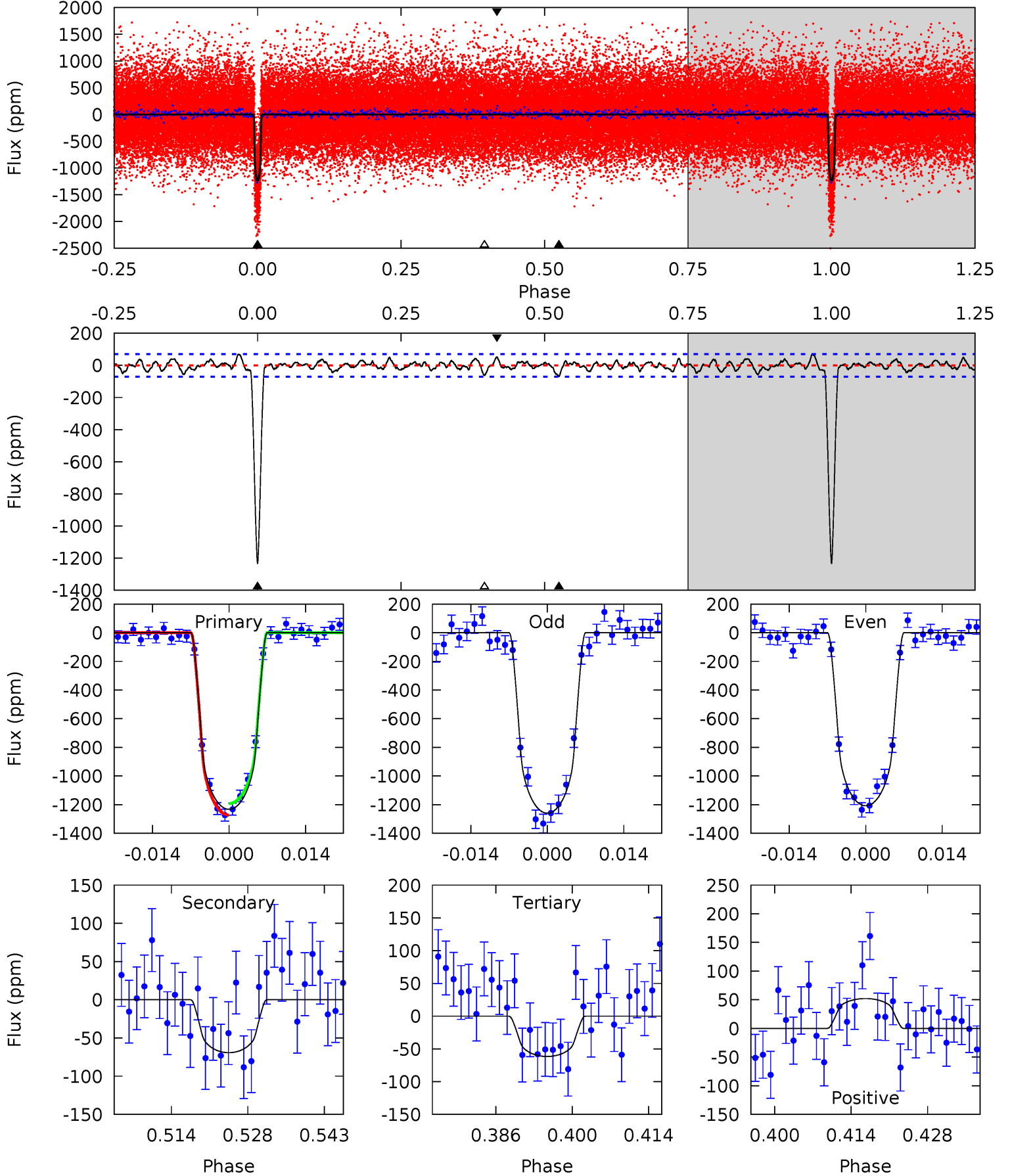
TCE 007678434-01 P= 10.371691 Days $T_0=141.502332$ (BKJD)



DV Model-Shift Uniqueness Test

007678434-01, $P = 10.371663$ Days, $E = 131.132781$ Days

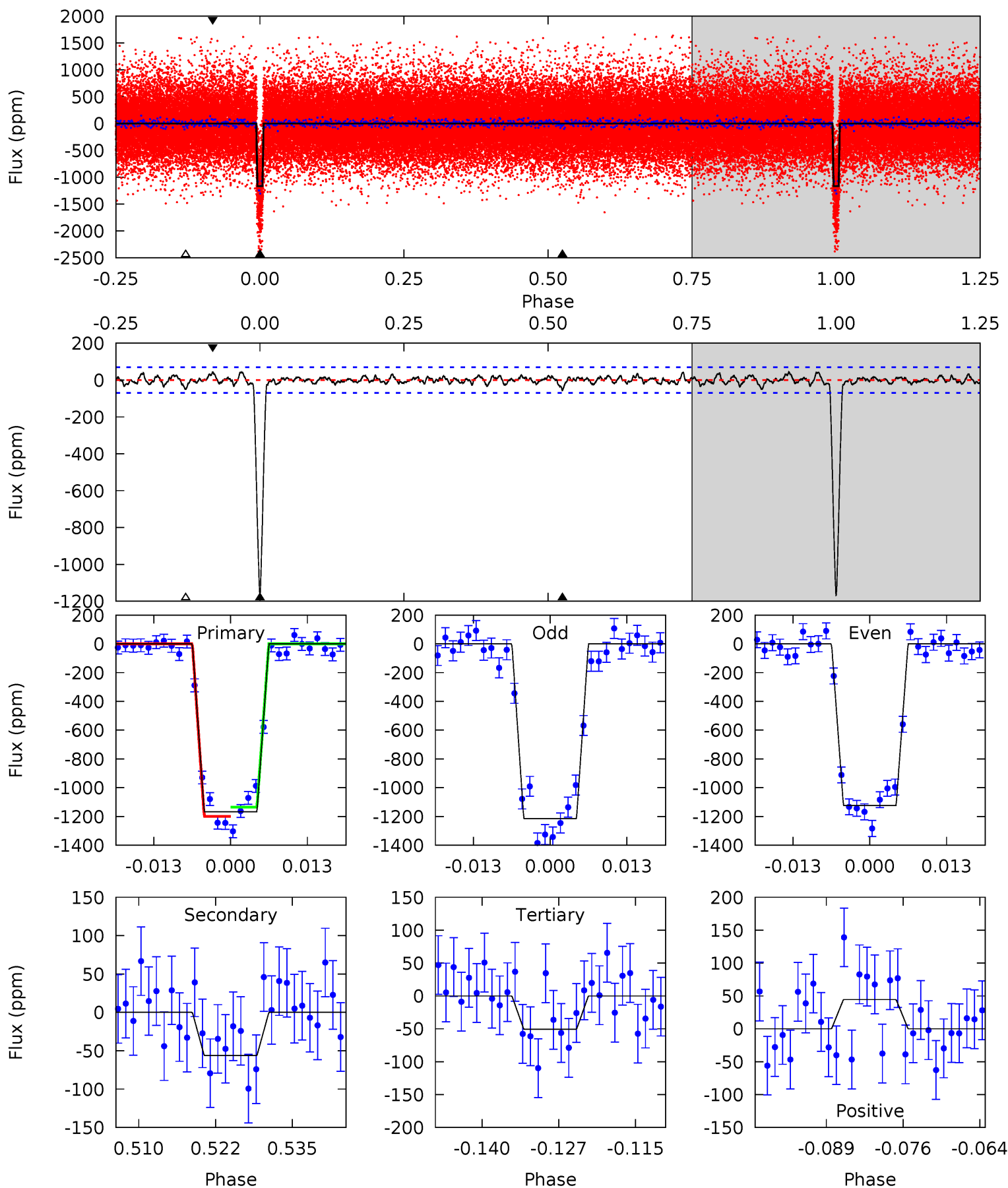
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
87.2	4.90	4.36	3.68	4.96	2.45	1.45	82.9	83.5	0.54	1.22	1.83	1.00	0.05	2.86



Alt Model-Shift Uniqueness Test

007678434-01, P = 10.371691 Days, E = 131.130641 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
83.5	4.03	3.63	3.18	4.98	2.49	1.05	79.9	80.3	0.40	0.85	3.30	0.99	0.04	2.33



Stellar Parameters For KIC 007678434

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5121^{+76}_{-84}	$4.457^{+0.091}_{-0.039}$	$0.180^{+0.150}_{-0.150}$	$0.888^{+0.049}_{-0.077}$	$0.822^{+0.053}_{-0.029}$	$1.656^{+0.594}_{-0.235}$
	+1%/-2%	+2%/-1%	+83%/-83%	+6%/-9%	+6%/-4%	+36%/-14%
Source	SPE90	SPE90	SPE90	DSEP		

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

Secondary Eclipse Parameters for KIC 007678434-01 / KOI 0892.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-69 ± 14	$3.32^{+0.66}_{-0.67}$	1002^{+23}_{-27}	3108^{+219}_{-186}	27^{+16}_{-9}
Alt.	-56 ± 14	$3.26^{+0.69}_{-0.62}$	1001^{+24}_{-28}	3025^{+212}_{-189}	22^{+13}_{-8}

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

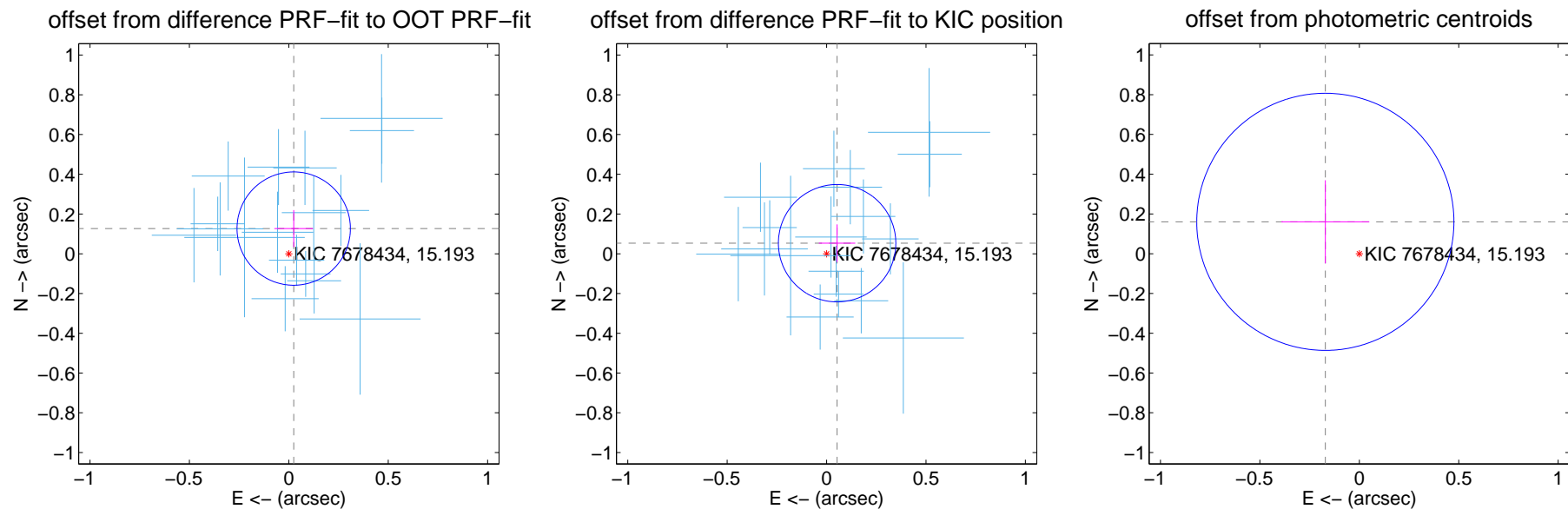
DV Centroid Data

Supplemental centroid analysis for 007678434-01. Kepler magnitude: 15.19. Transit SNR 55.52

There are 17 quarters with good PRF difference image offsets

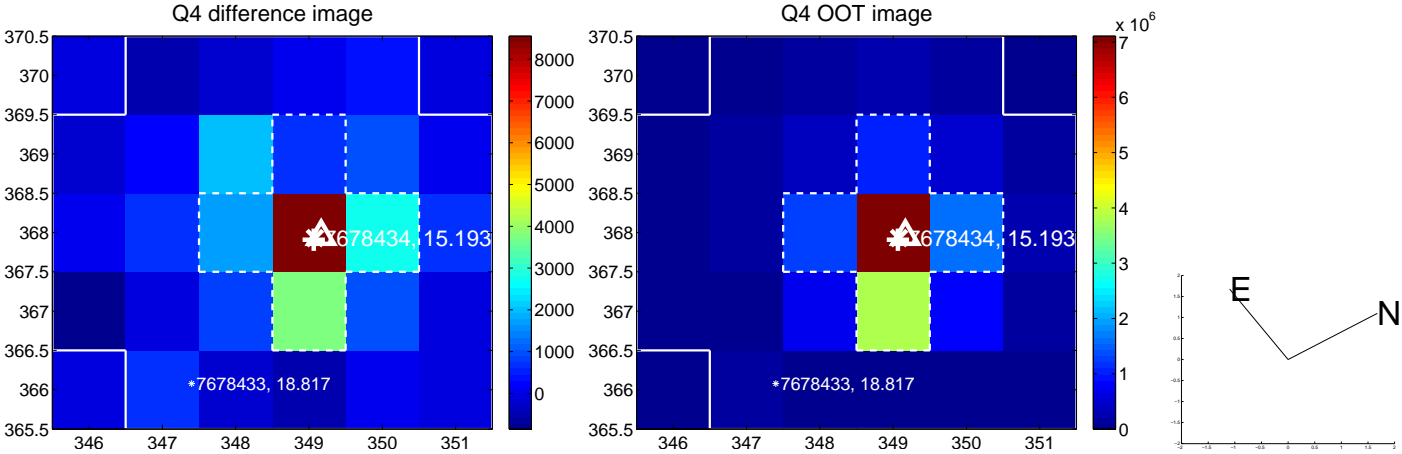
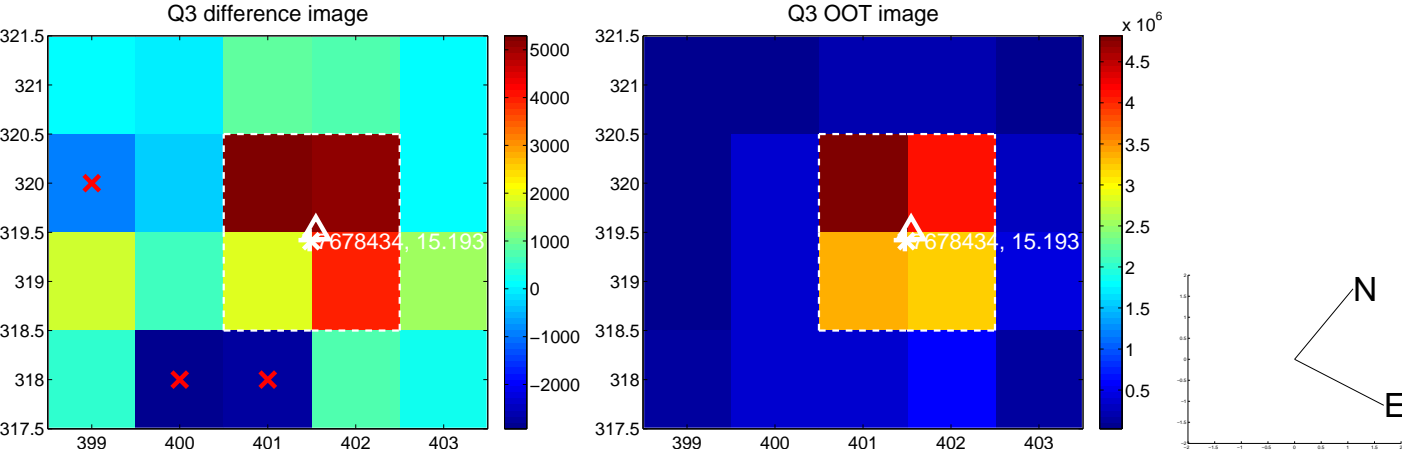
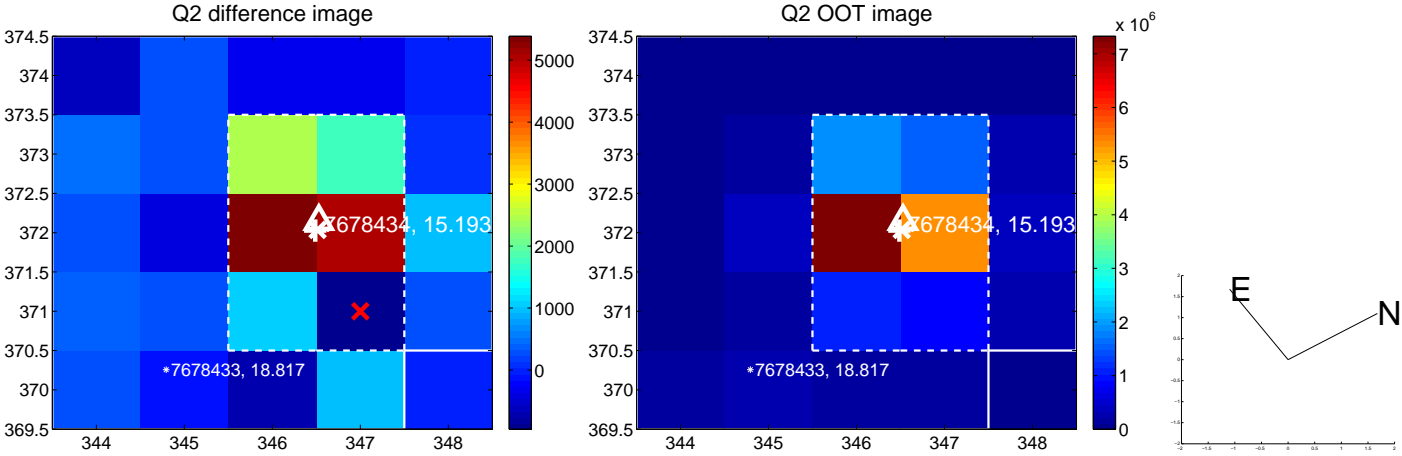
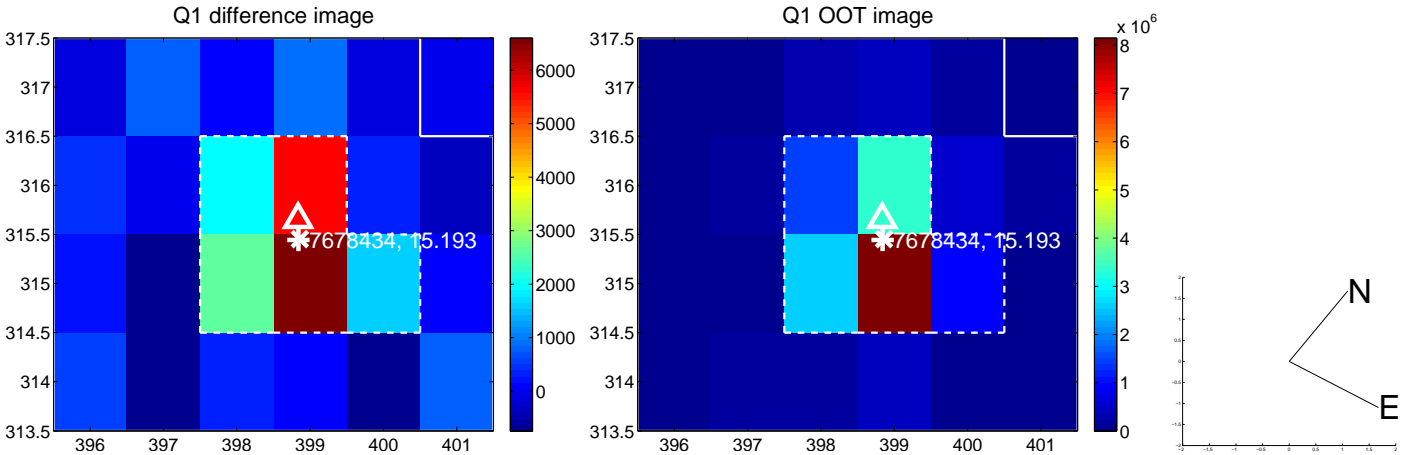
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.129 ± 0.095	1.36	-0.025 ± 0.097	0.127 ± 0.093
PRF-fit source offset from KIC position	0.075 ± 0.098	0.76	-0.053 ± 0.092	0.053 ± 0.094
photometric centroid source offset	0.23 ± 0.22	1.09	0.17 ± 0.22	0.16 ± 0.21

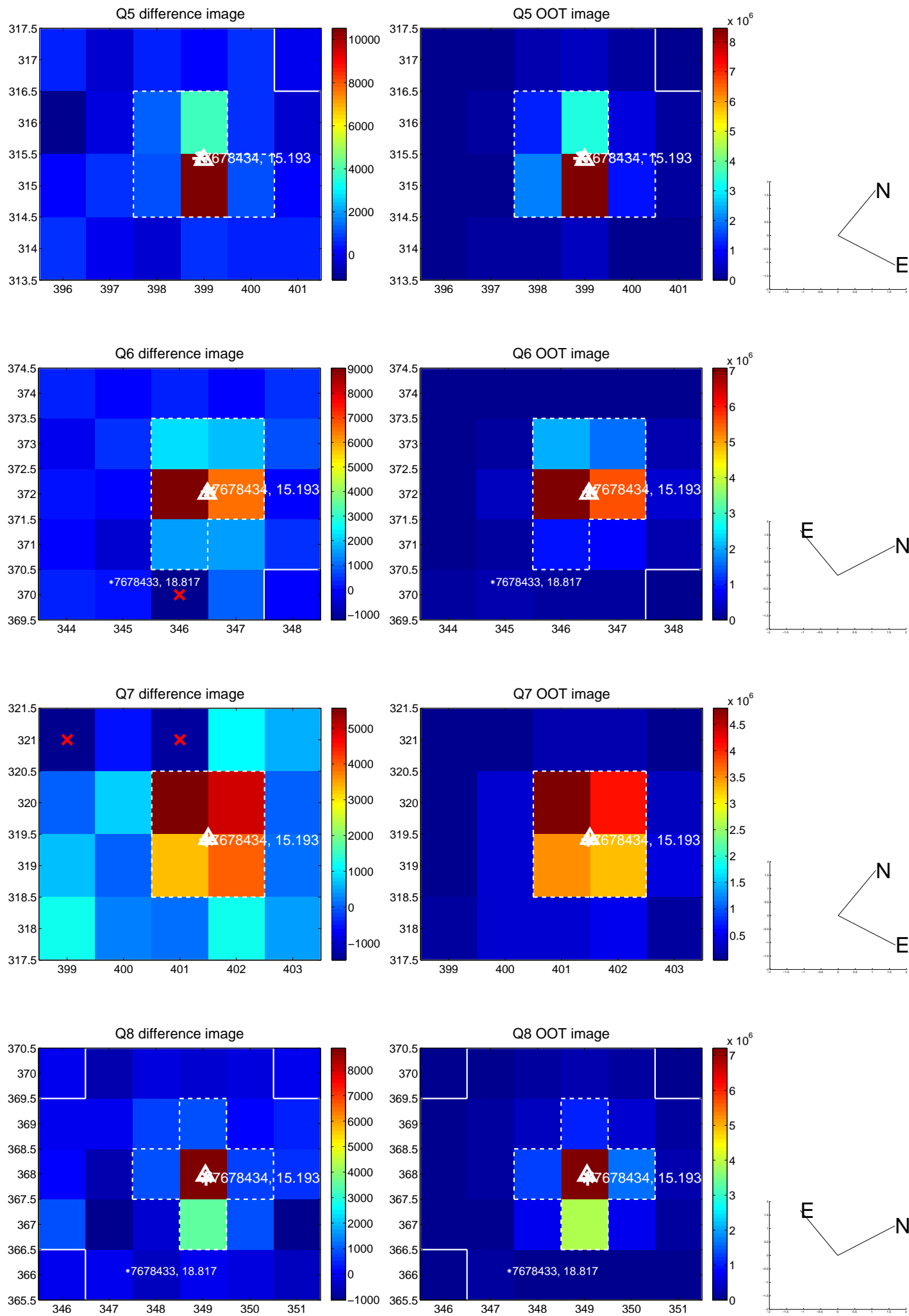


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

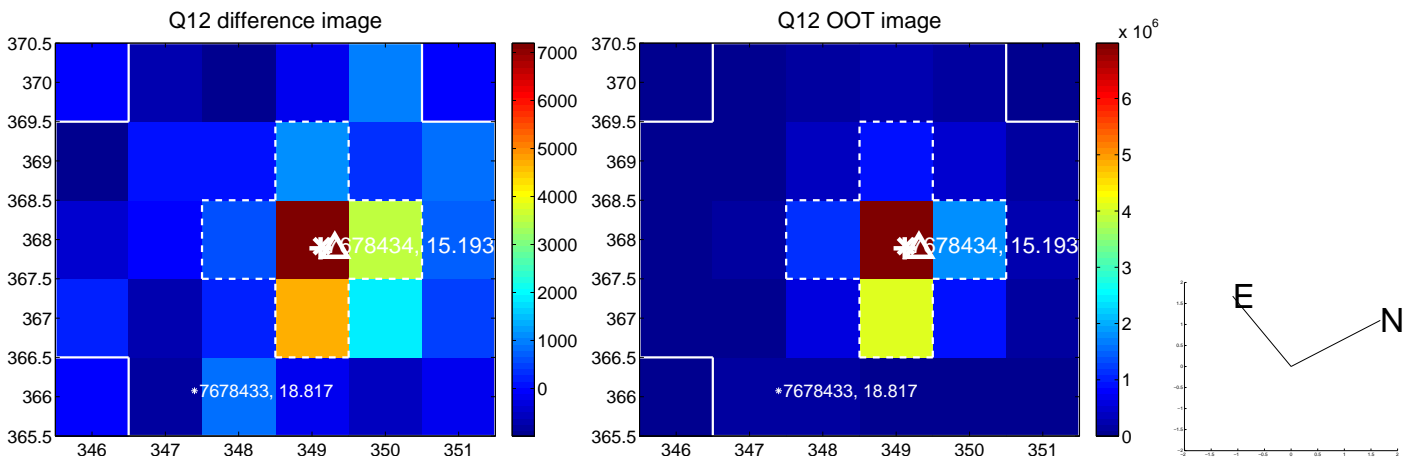
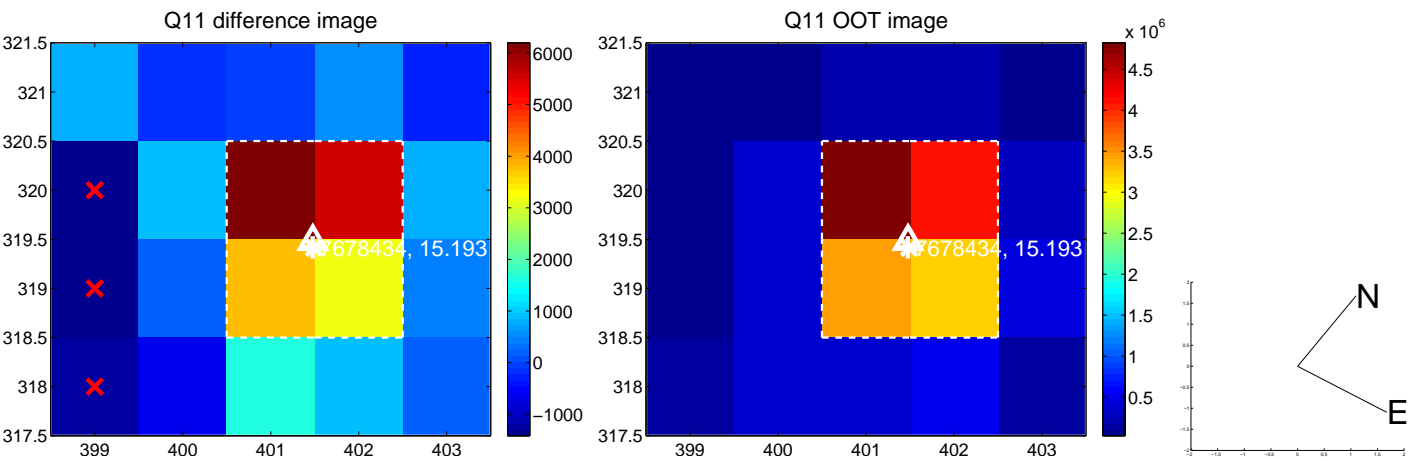
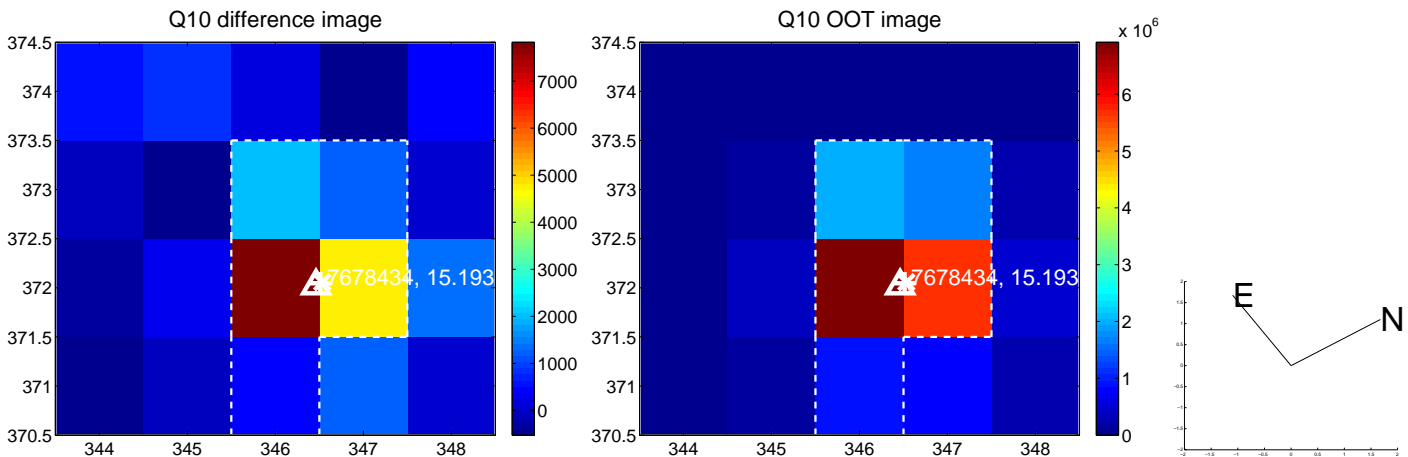
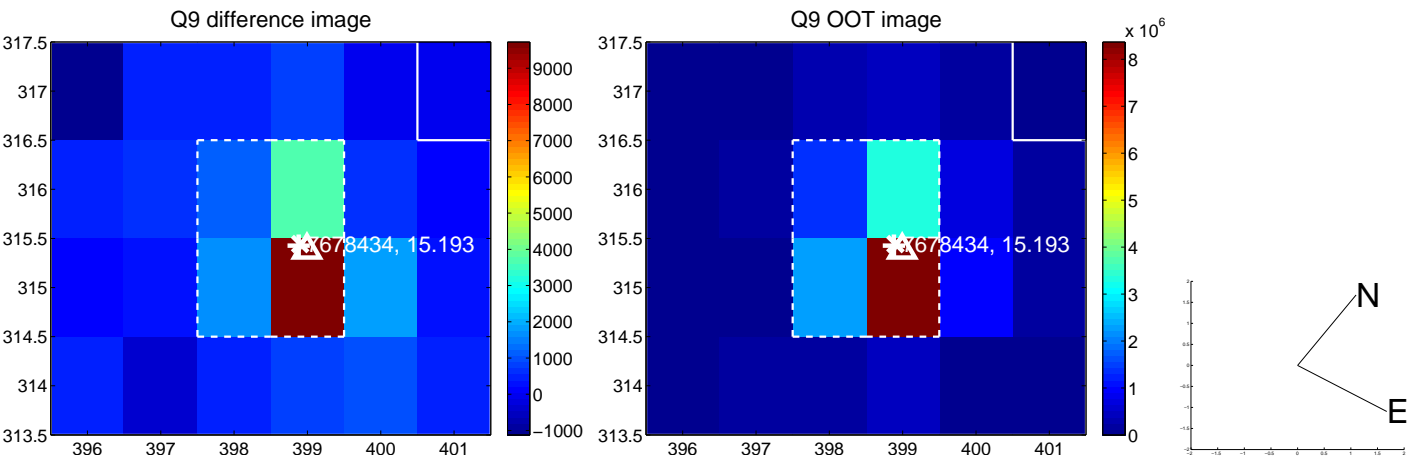
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



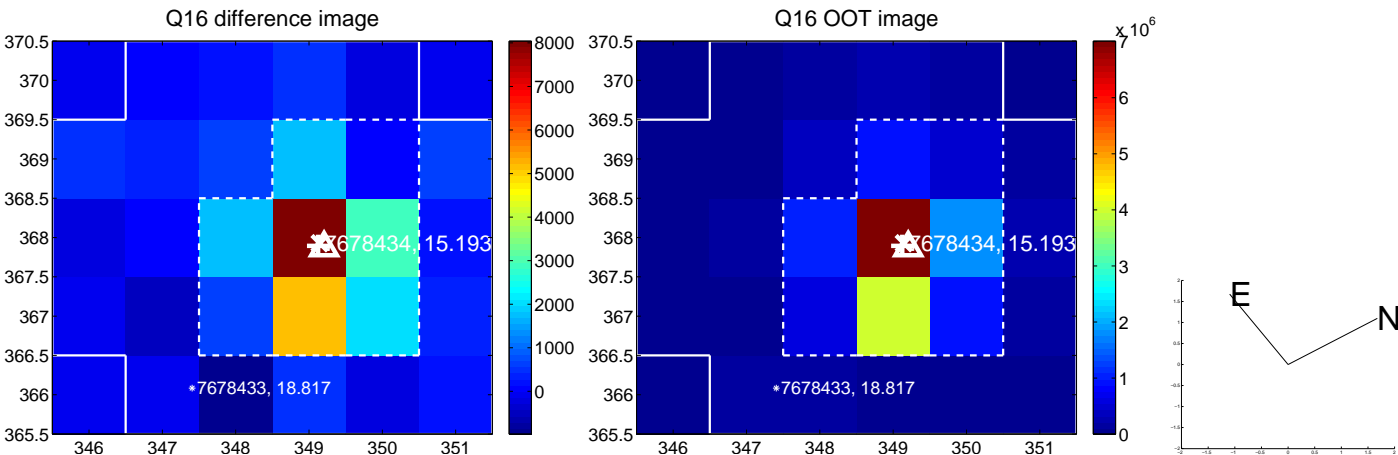
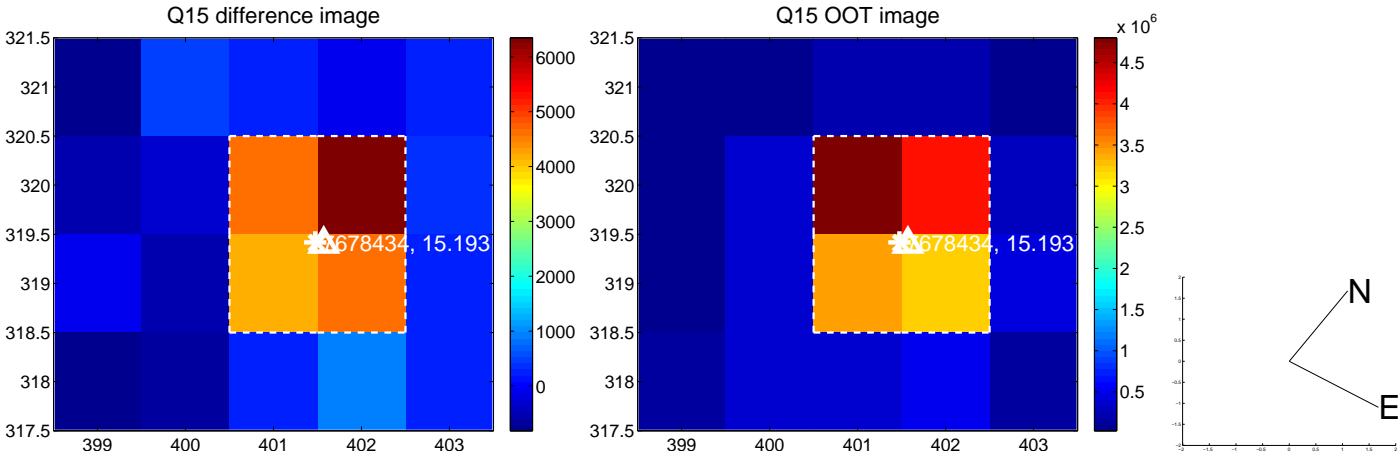
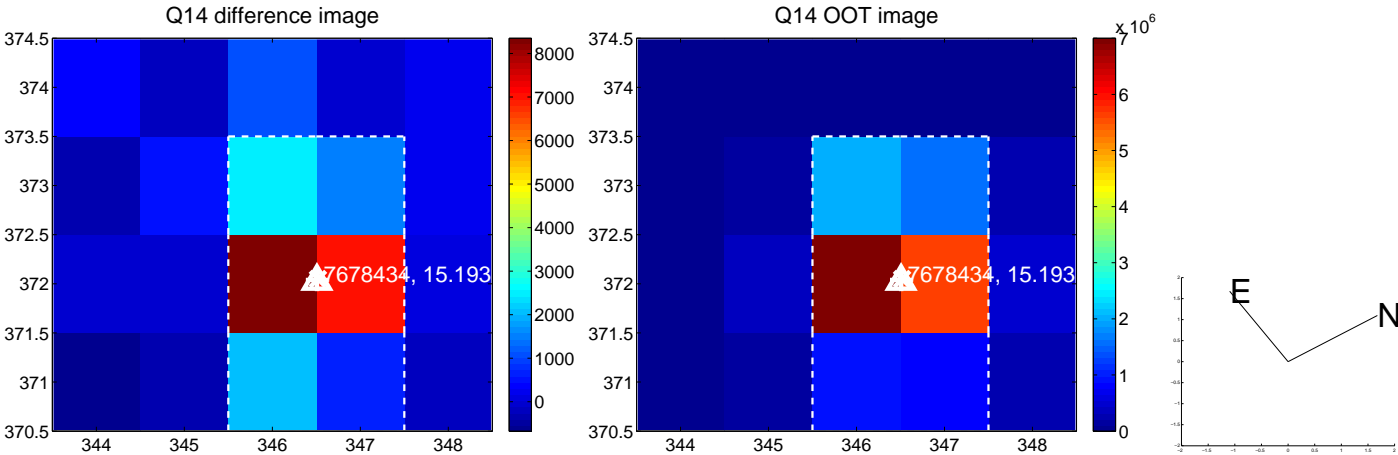
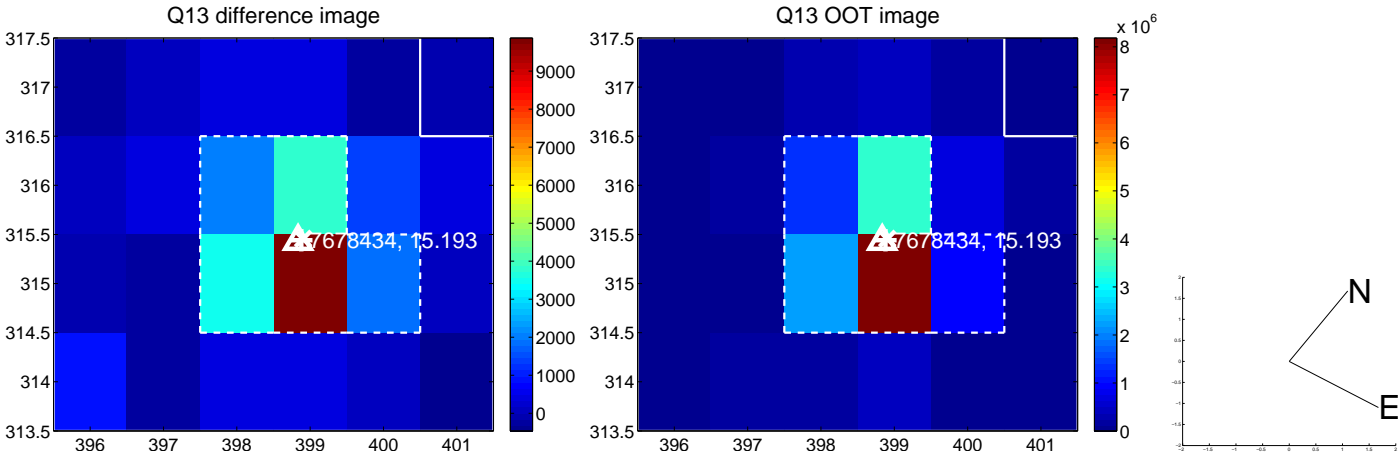
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



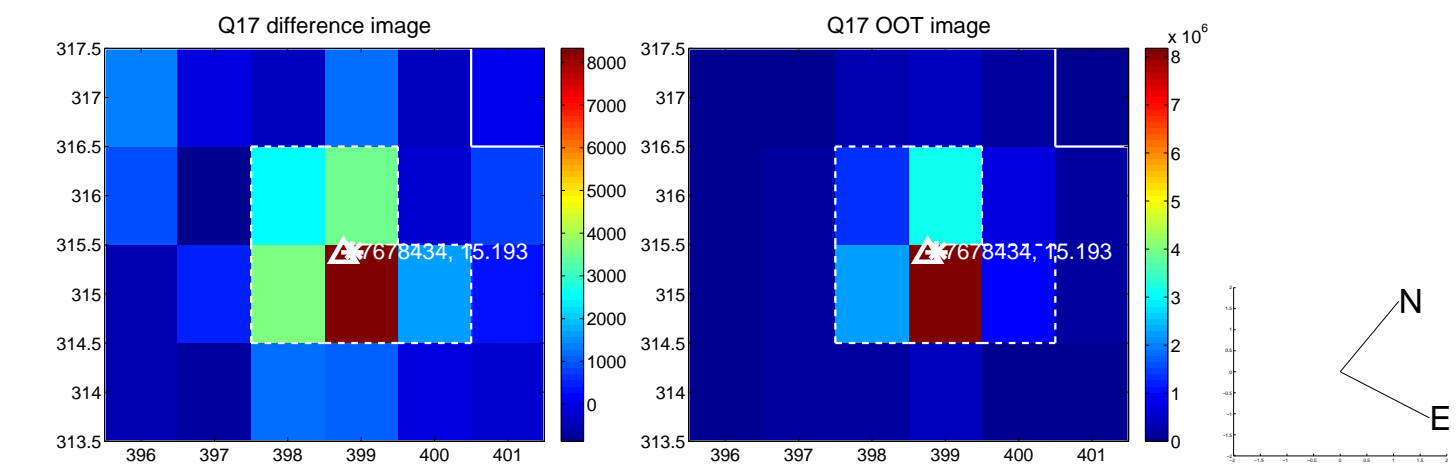
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



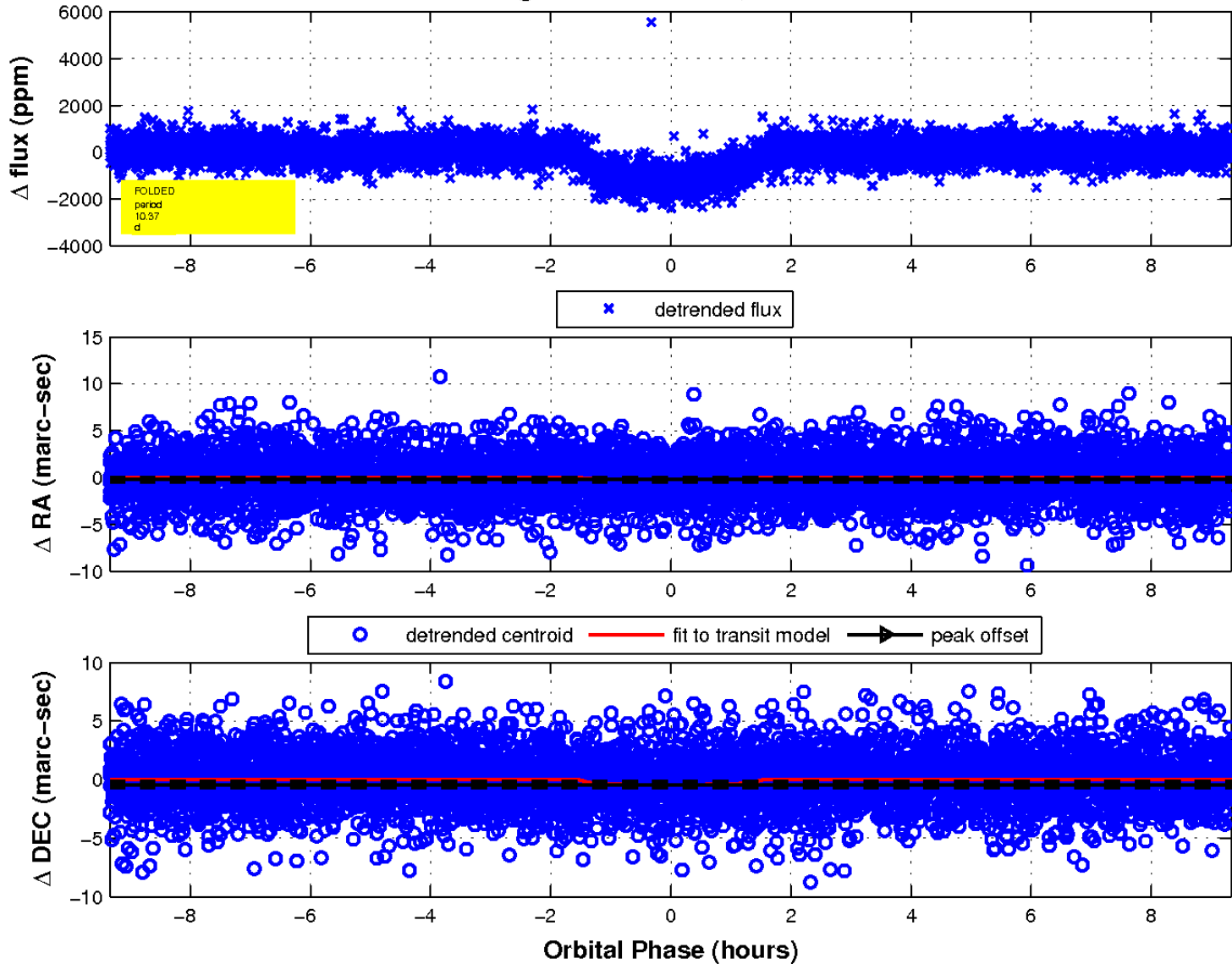
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

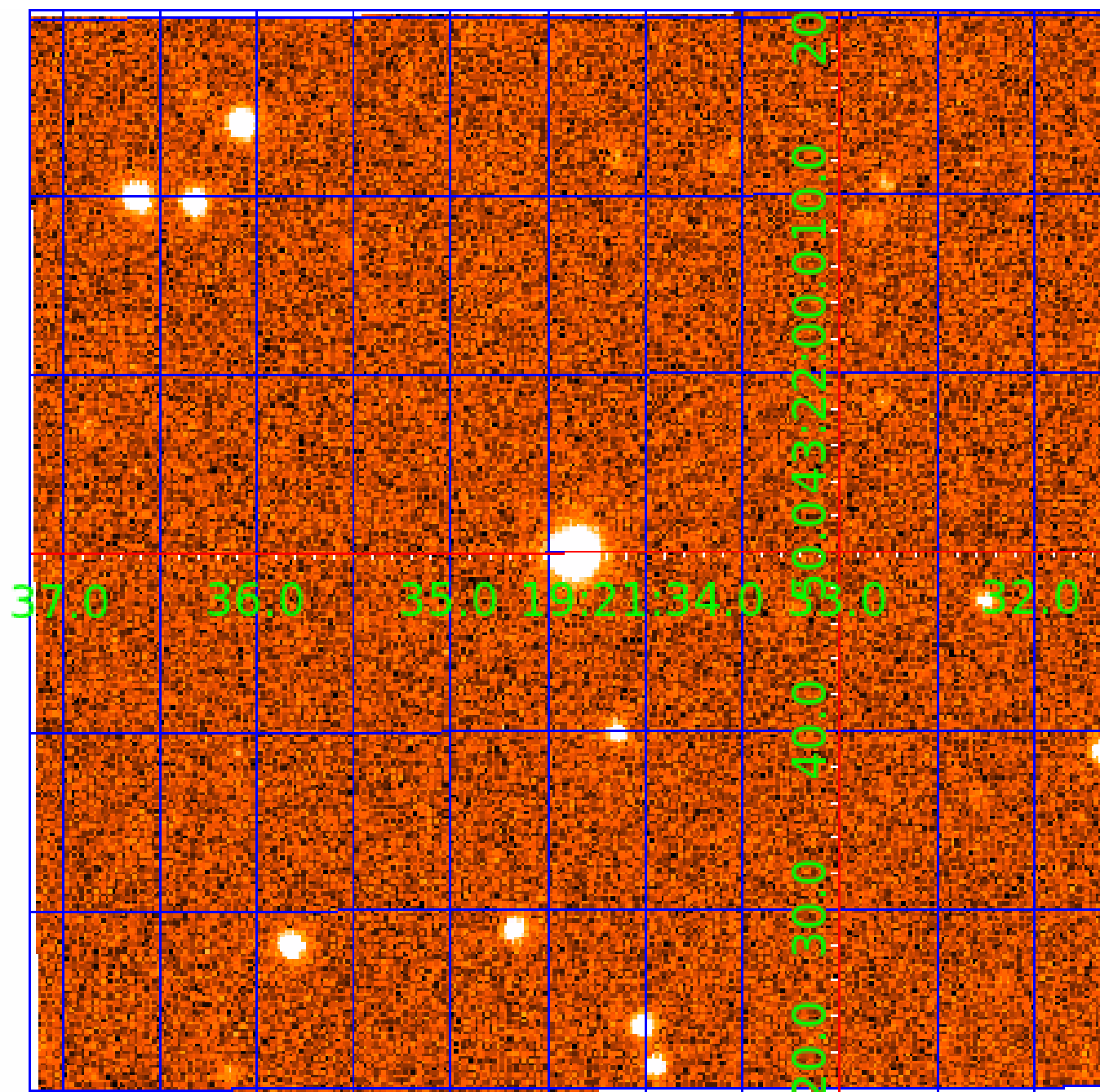


fluxWeightedCentroids, Planet 1 of 2



UKIRT Image

Declination



KIC 007678434

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})
007678434-01	OBS	0892.01	10.371663	141.504444	1249.6	3.113	51.2	55.5	0.89	5121	3.36	63.80
007678434-02	OBS	0892.02	3.969987	133.779950	279.4	1.327	12.7	14.9	0.89	5121	1.67	229.55

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007678434-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT
007678434-02	OBS	PC	1.00	0	0	0	0	NO_COMMENT

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.

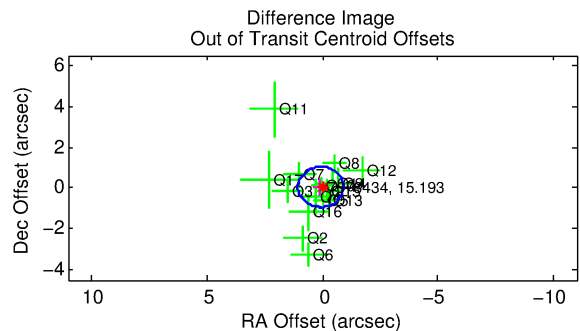
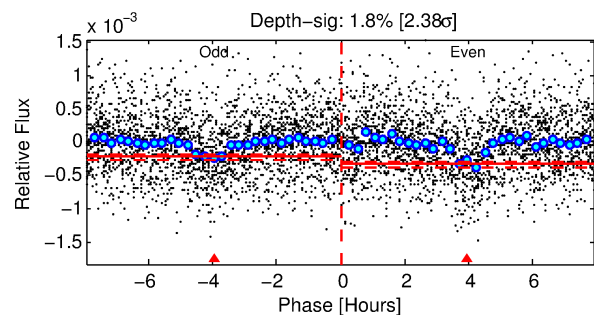
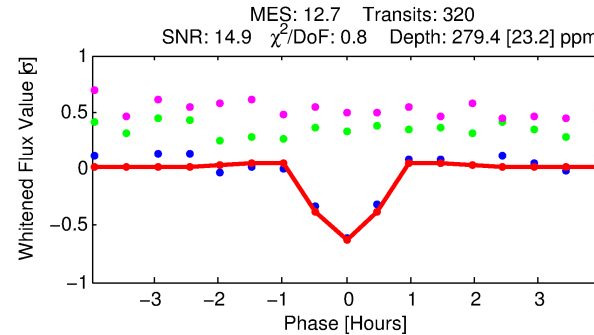
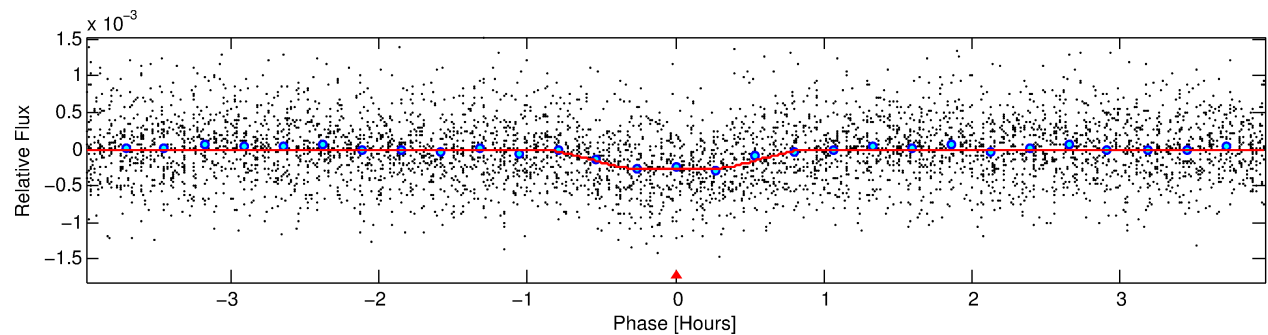
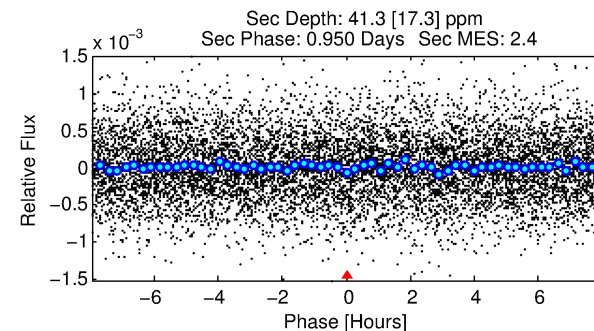
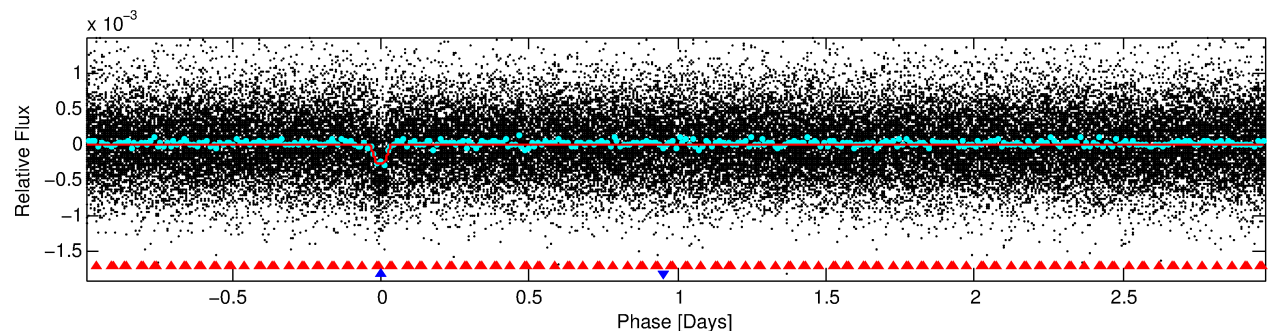
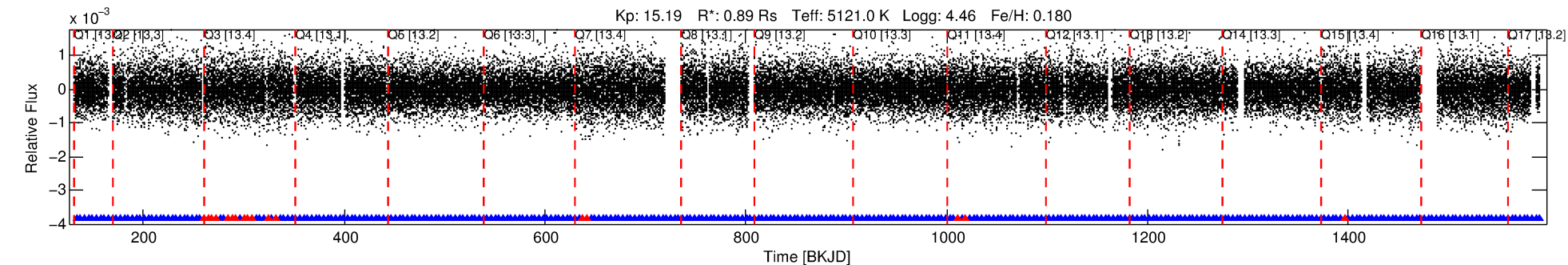
Ephemeris Match Information For 007678434-02

No Significant Match Found

DV One-Page Summary

KIC: 7678434 Candidate: 2 of 2 Period: 3.970 d

KOI: K00892.02 Corr: 0.922



DV Fit Results:

Period = 3.96999 [0.00001] d
Epoch = 133.7799 [0.0018] BKJD
Rp/R* = 0.0172 [0.0142]
a/R* = 14.42 [42.84]
b = 0.80 [1.40]
Seff = 229.55 [37.83]
Teq = 993 [41] K
Rp = 1.67 [1.38] Re
a = 0.0460 [0.0042] AU
Ag = 17.25 [29.41] [0.55σ]
Teffp = 3128 [1329] K [1.61σ]

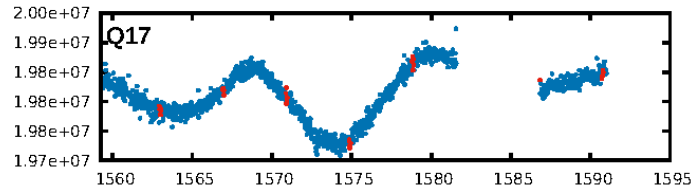
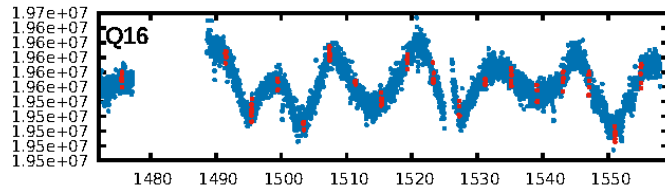
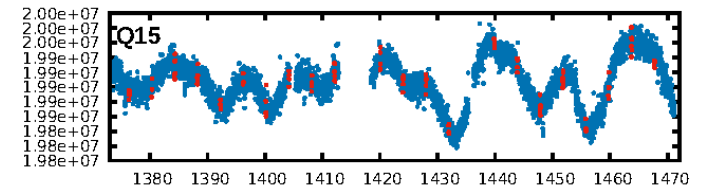
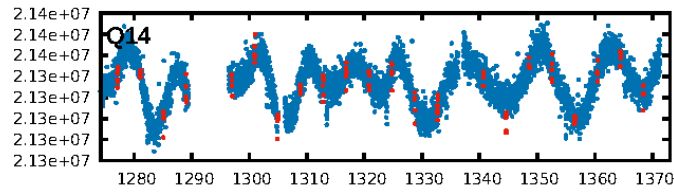
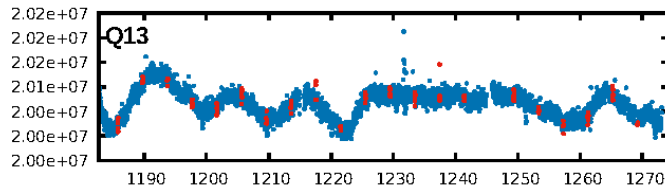
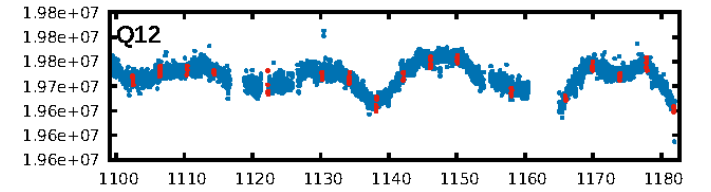
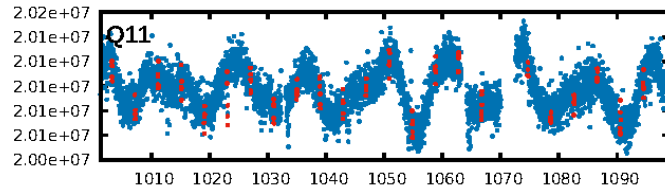
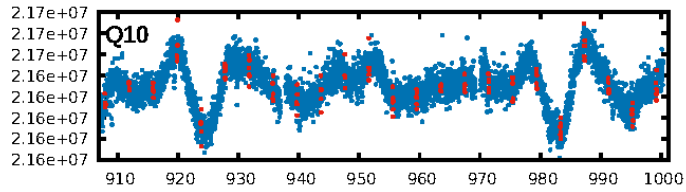
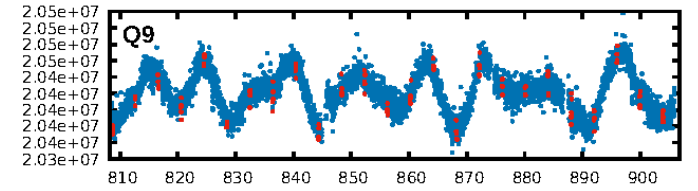
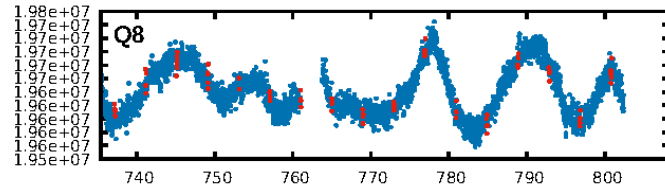
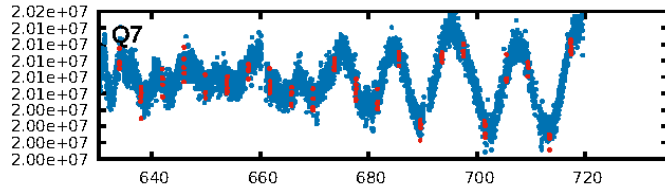
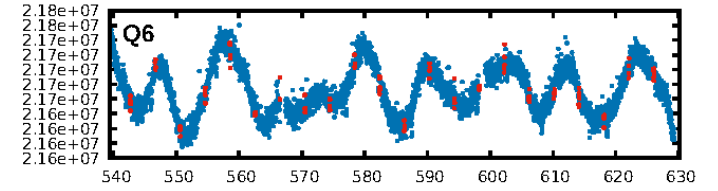
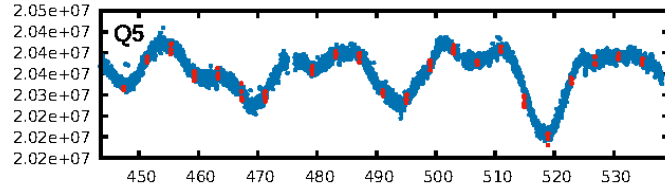
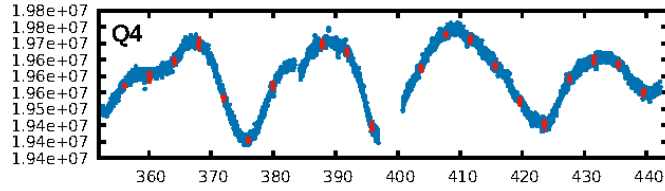
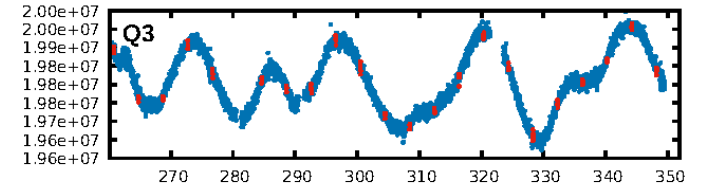
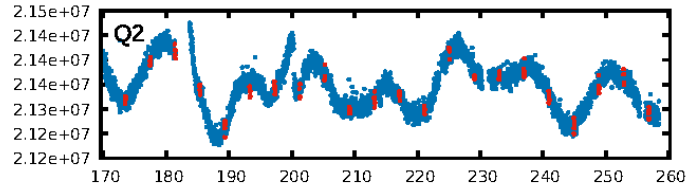
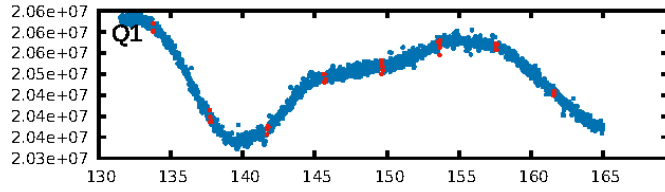
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [45.40σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 4.71e-36
RollingBand-fgt: 0.94 [288/305]
GhostDiagnostic-chr: 3.577
Centroid-sig: 18.4%
Centroid-so: 1.027 arcsec [1.11σ]
OotOffset-rm: 0.097 arcsec [0.30σ]
KicOffset-rm: 0.063 arcsec [0.23σ]
OotOffset-st: 4/4/4/4 [16]
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DiffImageQuality-fgm: 0.50 [8/16]
DiffImageOverlap-fno: 1.00 [17/17]

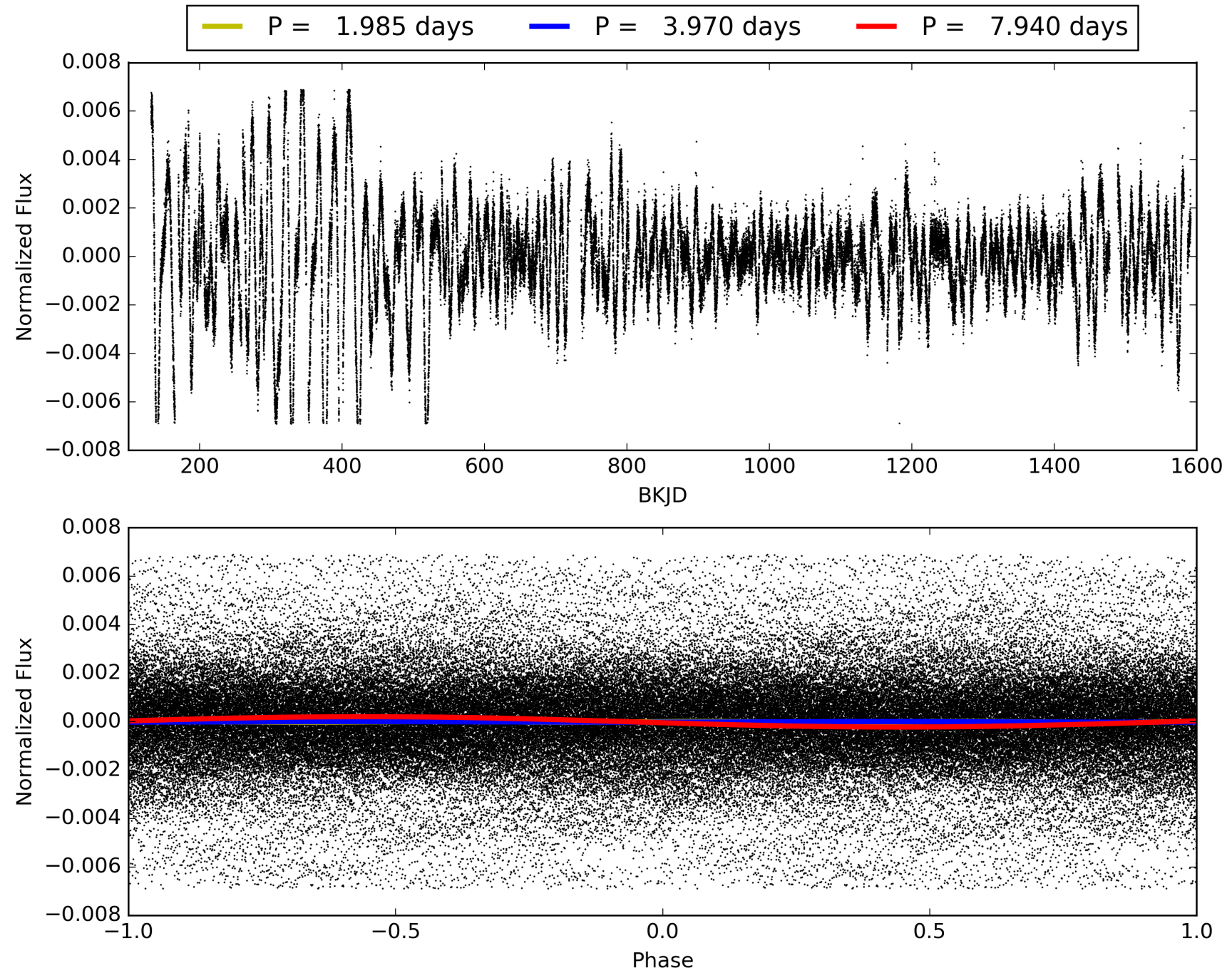
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 007678434-02, PDC Light Curves

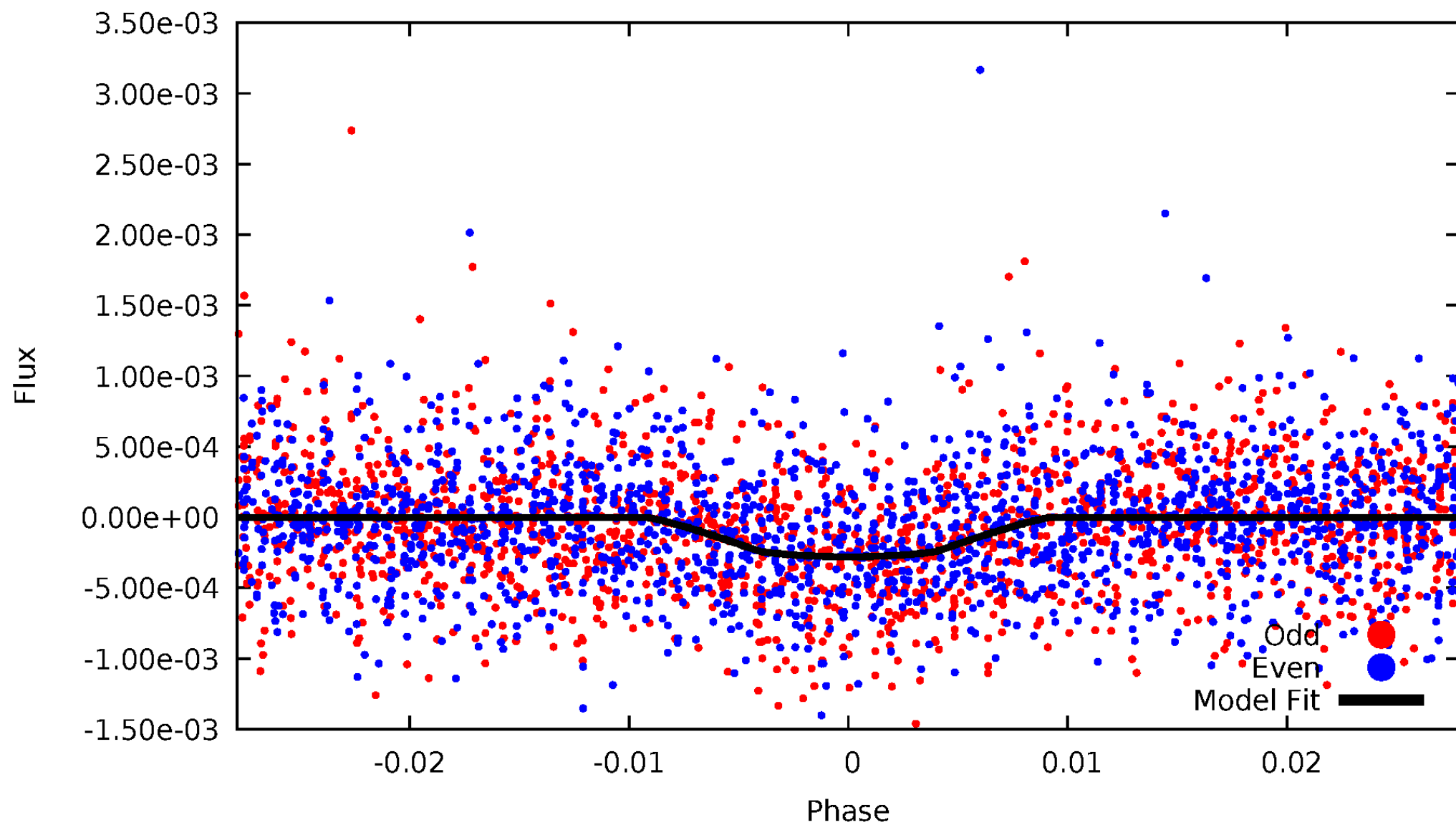


TCE 007678434-02



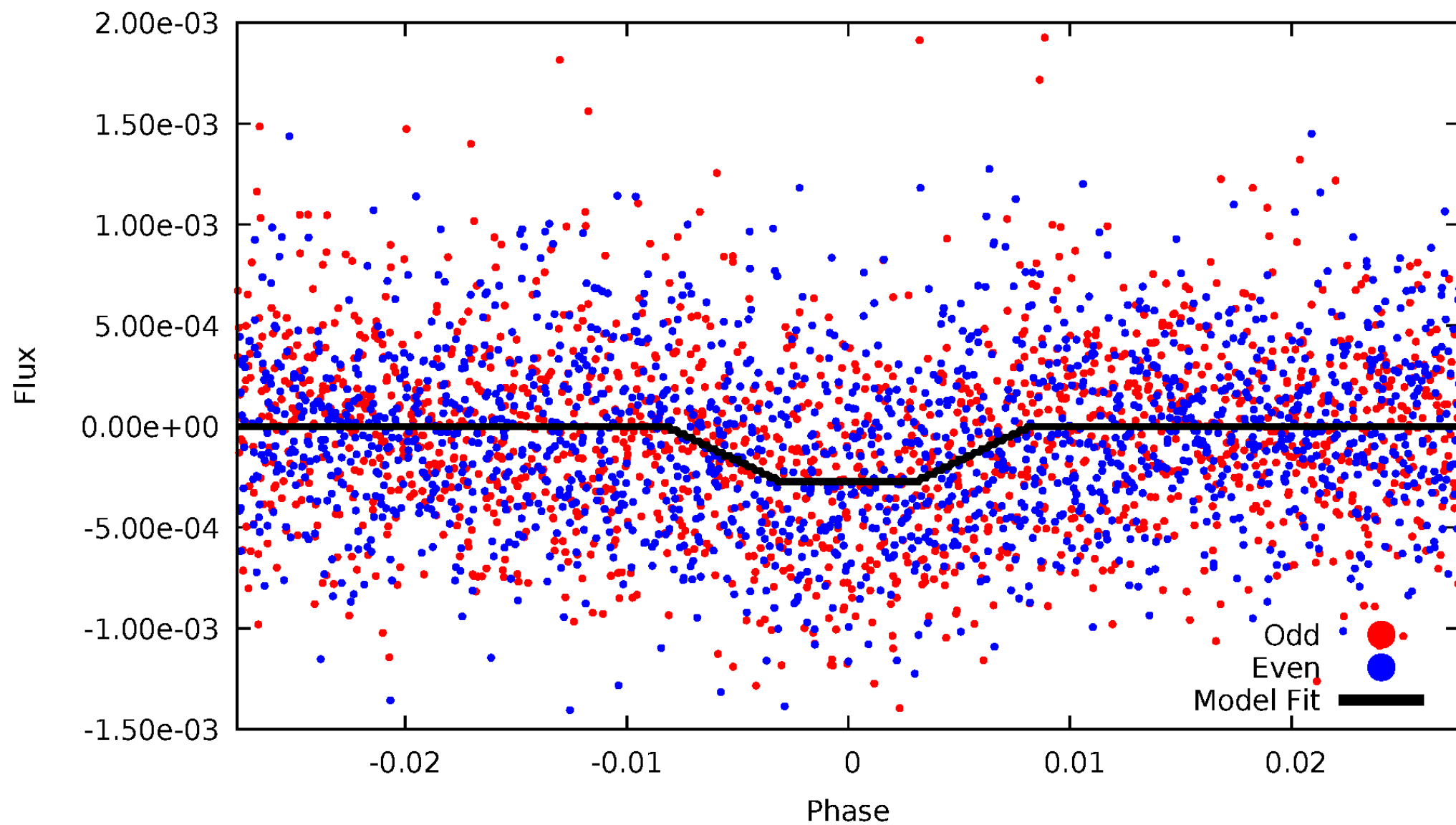
DV Odd/Even

TCE 007678434-02



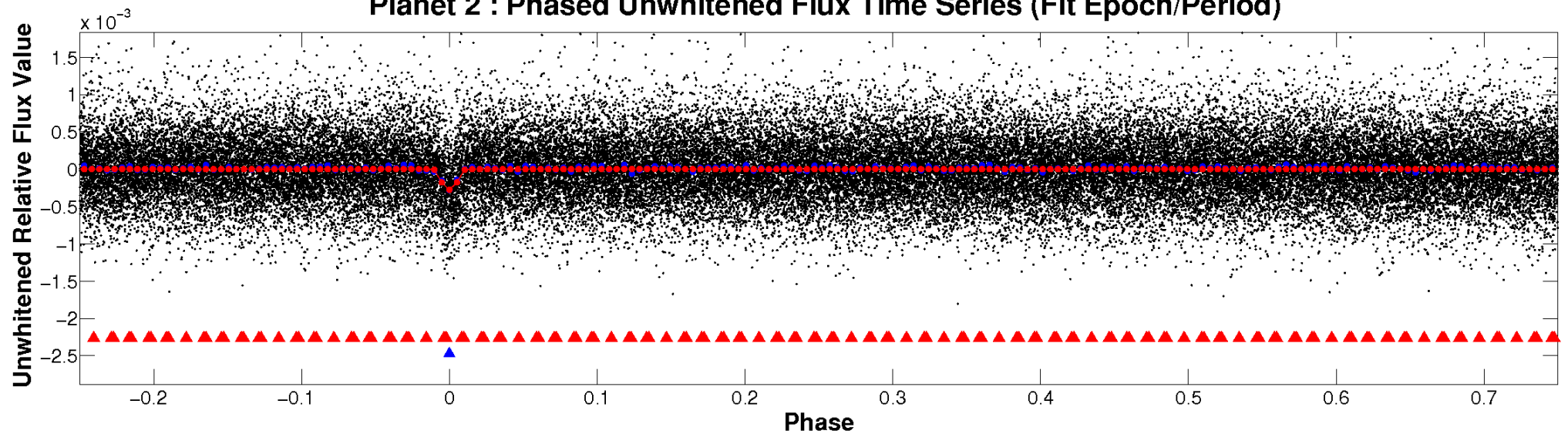
ALT Odd/Even

TCE 007678434-02

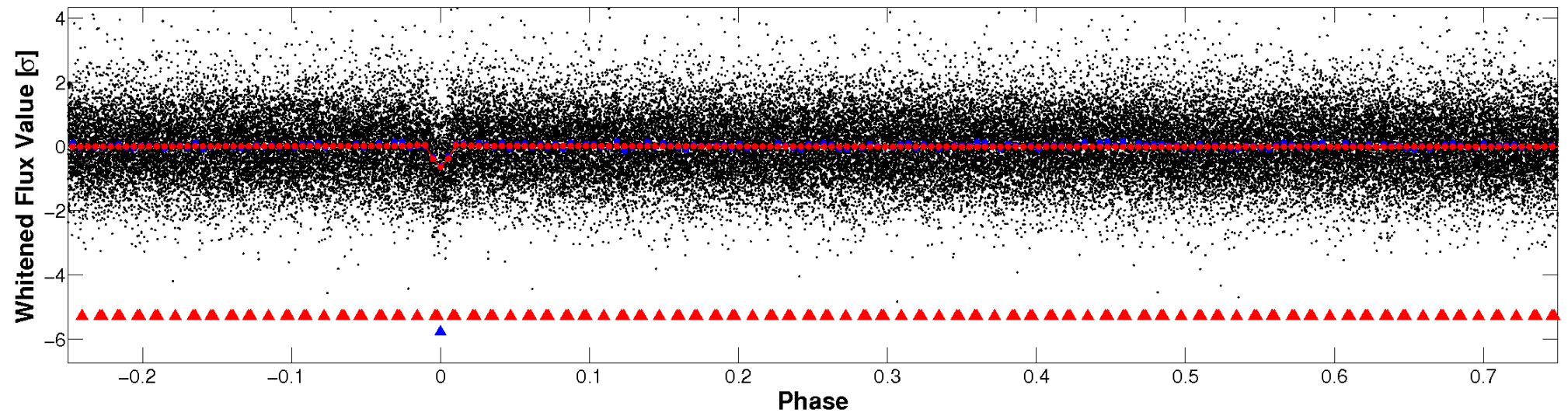


Non-Whitened Vs. Whitened Light Curve

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

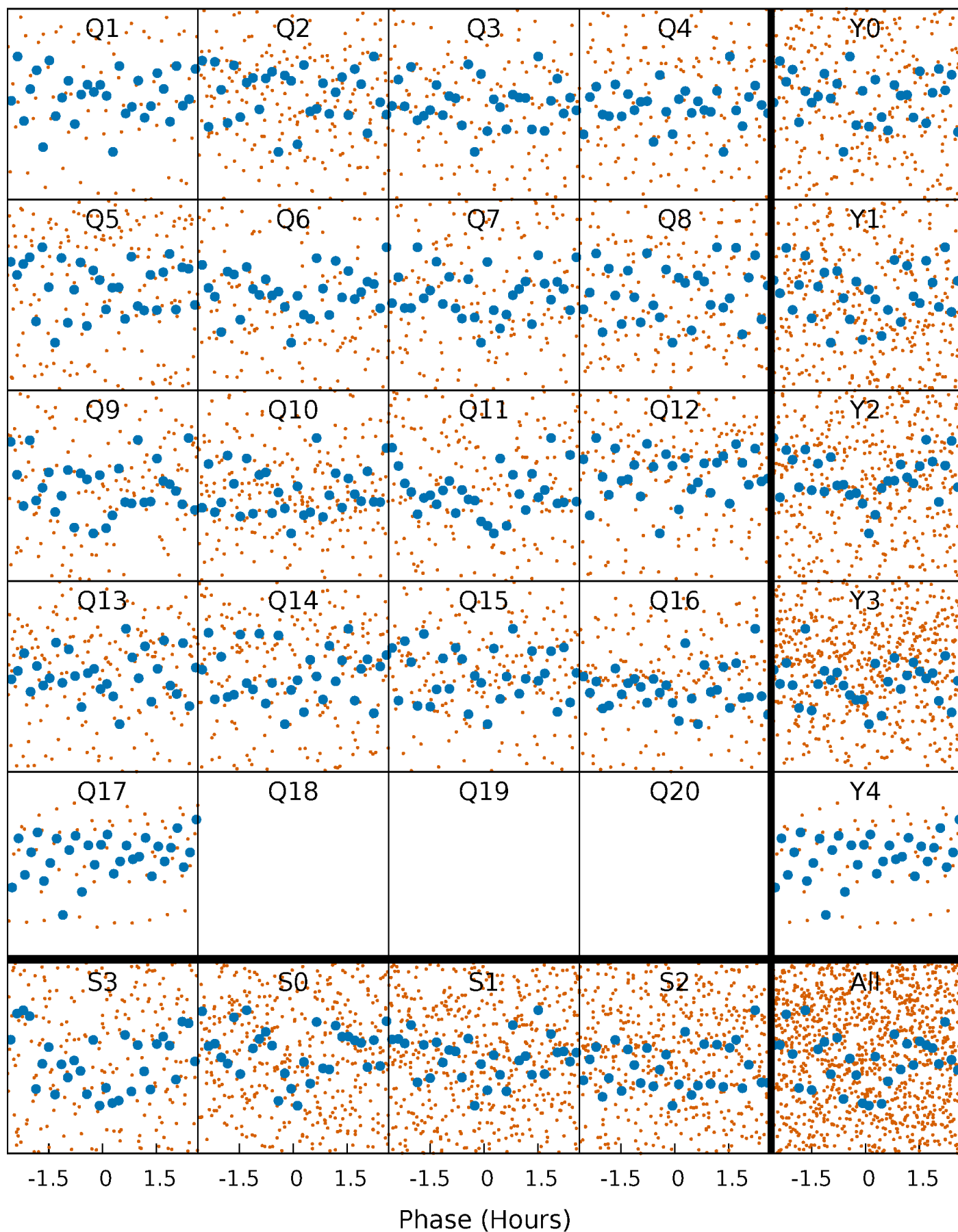


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



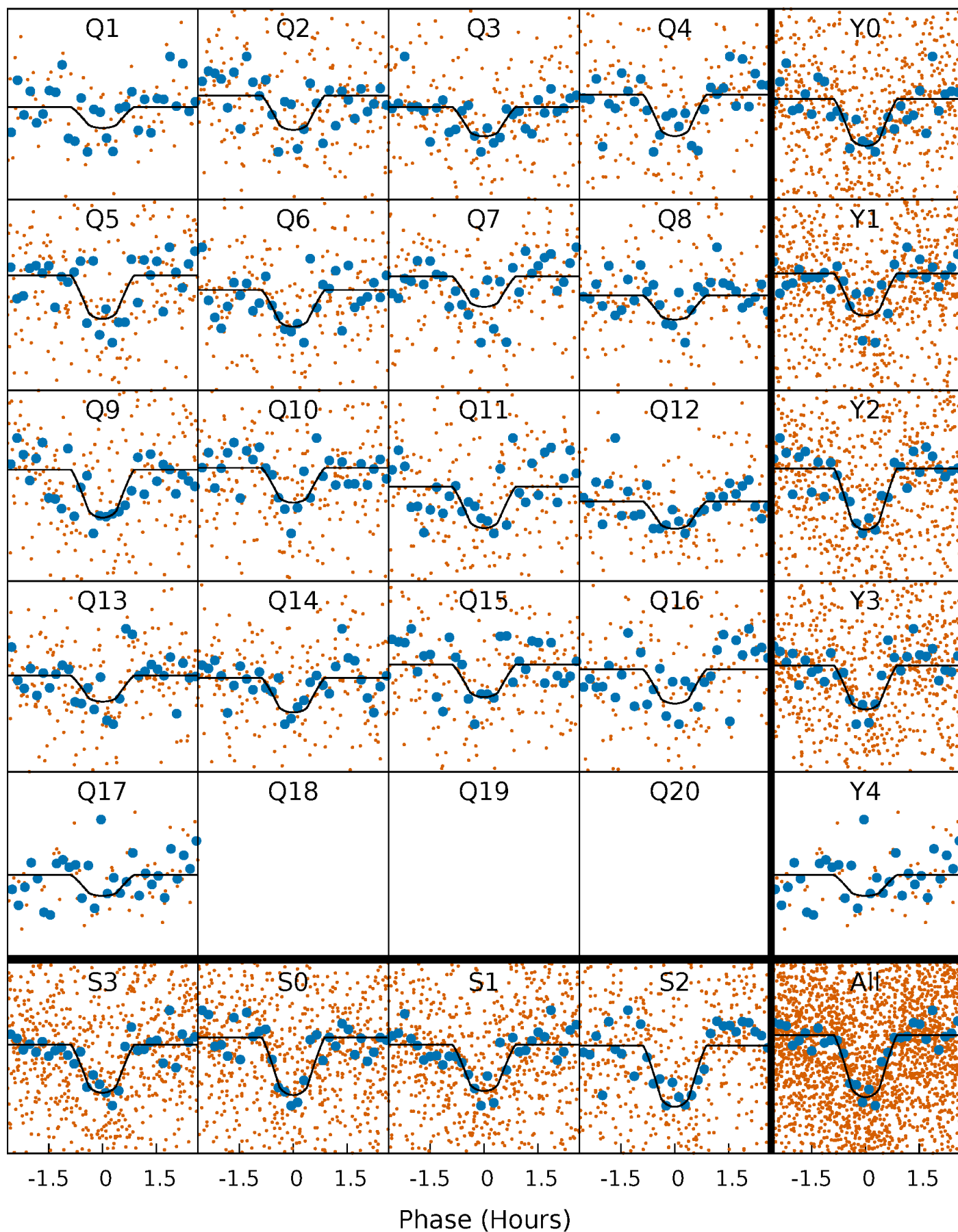
PDC Quarter-Phased Transit Curves

TCE 007678434-02 P= 3.969987 Days $T_0=133.779950$ (BKJD)



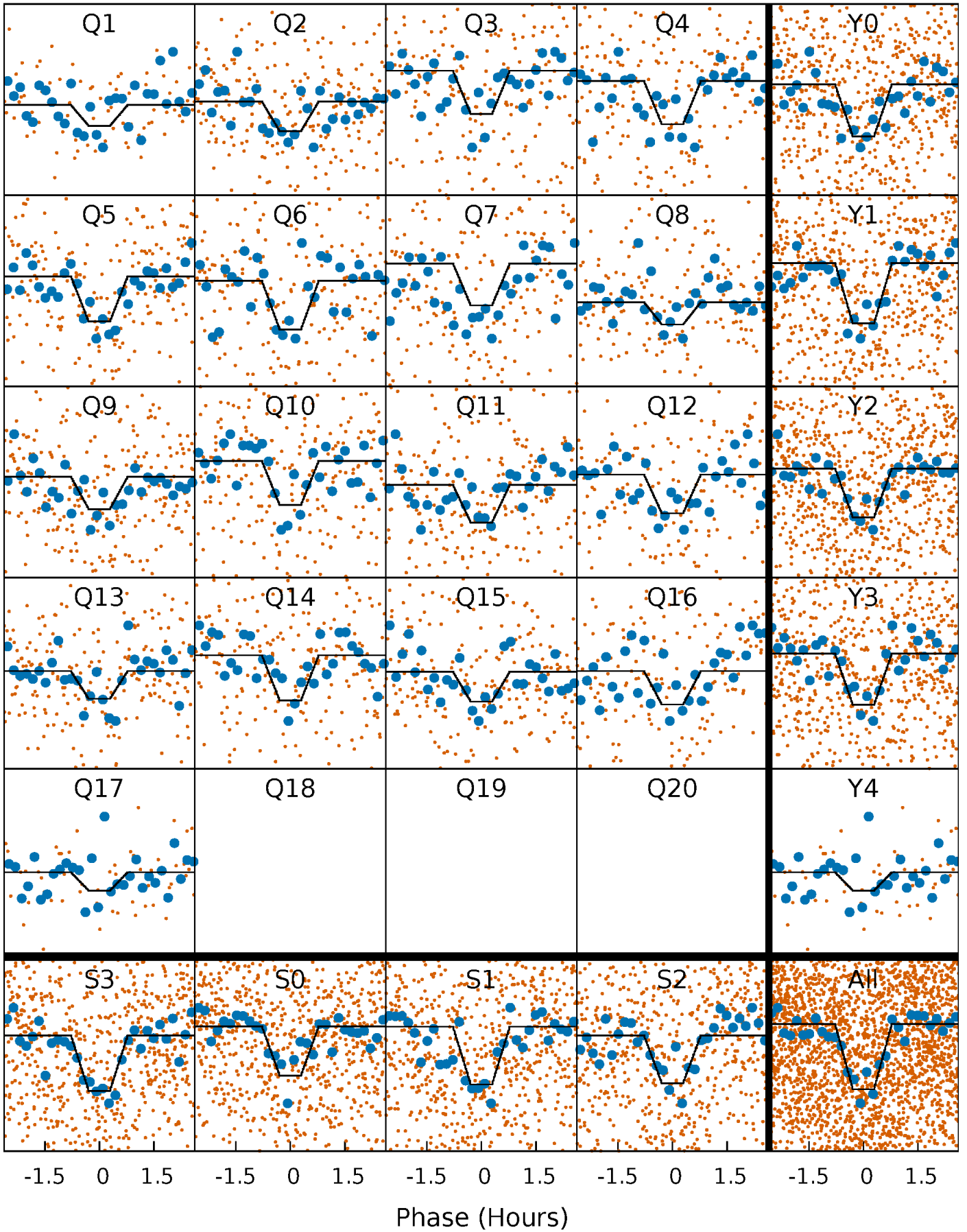
DV Quarter-Phased Transit Curves

TCE 007678434-02 P= 3.969987 Days $T_0=133.779950$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

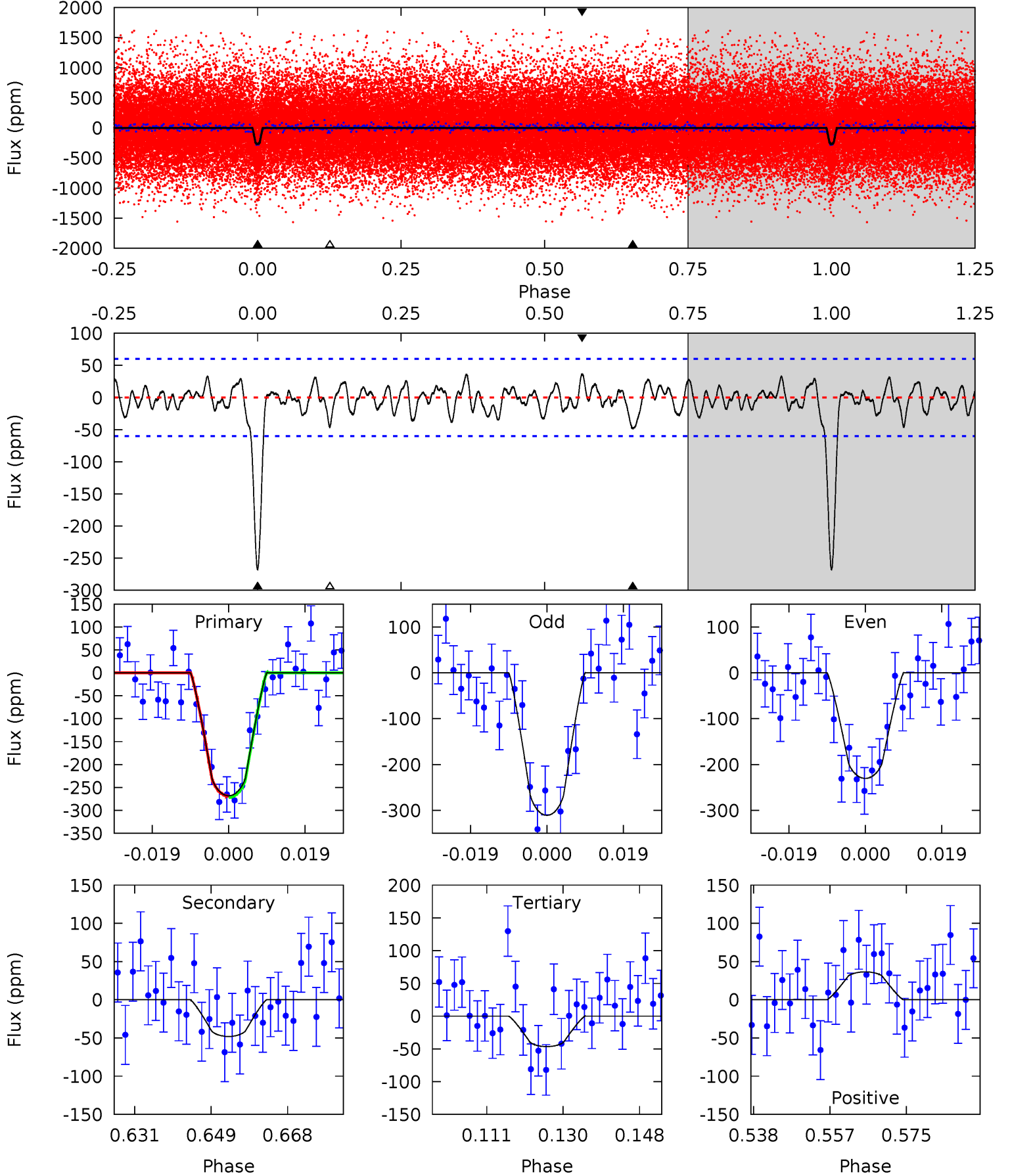
TCE 007678434-02 P= 3.969944 Days $T_0=133.788484$ (BKJD)



DV Model-Shift Uniqueness Test

007678434-02, P = 3.969987 Days, E = 129.809963 Days

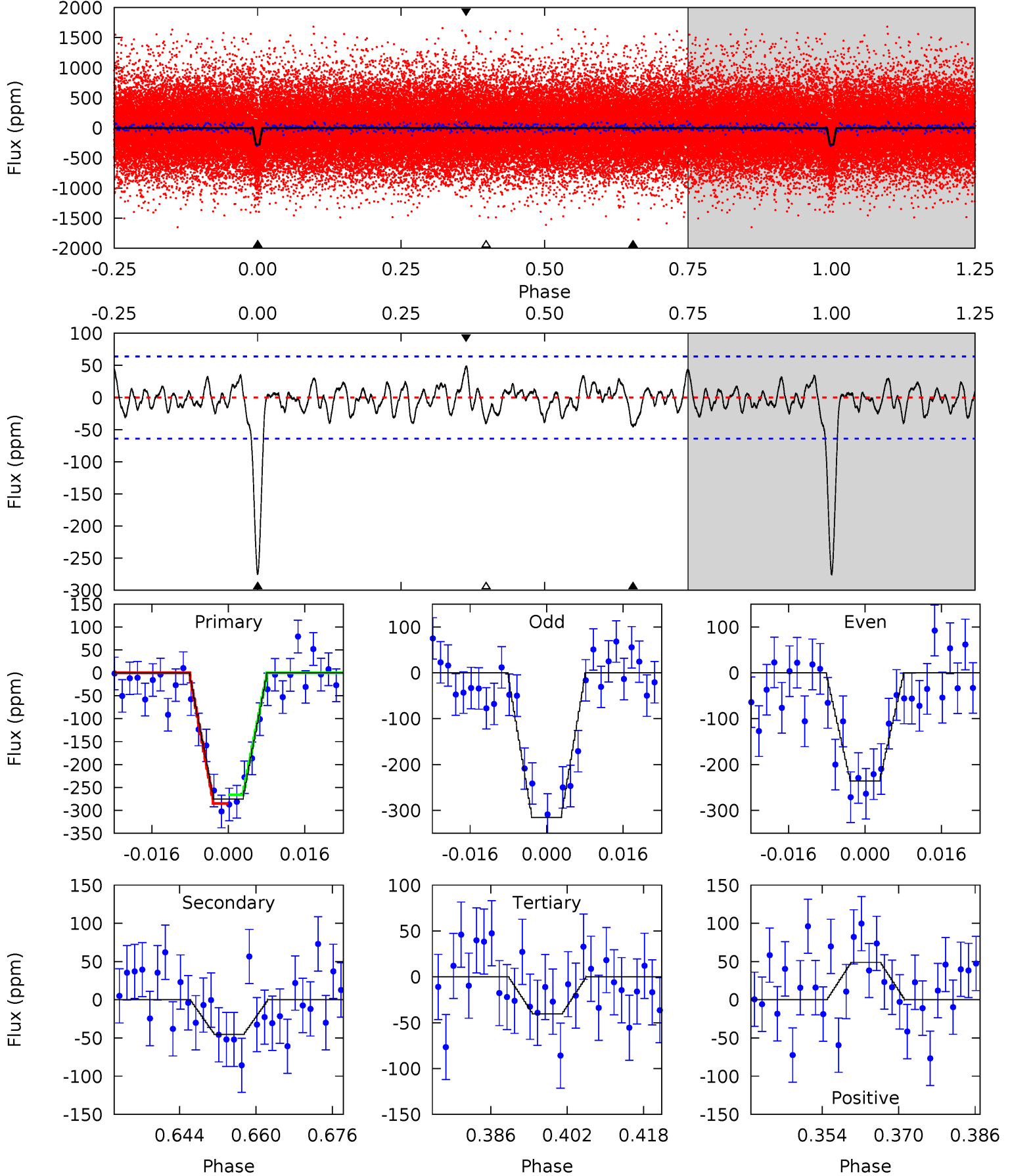
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
21.8	3.92	3.79	2.97	4.91	2.35	1.27	18.0	18.9	0.13	0.94	3.29	0.94	0.12	0.12



Alt Model-Shift Uniqueness Test

007678434-02, P = 3.969944 Days, E = 129.818540 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
21.3	3.50	3.12	3.78	4.93	2.41	1.25	18.1	17.5	0.37	-0.28	3.08	0.99	0.15	0.73



Stellar Parameters For KIC 007678434

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5121^{+76}_{-84}	$4.457^{+0.091}_{-0.039}$	$0.180^{+0.150}_{-0.150}$	$0.888^{+0.049}_{-0.077}$	$0.822^{+0.053}_{-0.029}$	$1.656^{+0.594}_{-0.235}$
	+1%/-2%	+2%/-1%	+83%/-83%	+6%/-9%	+6%/-4%	+36%/-14%
Source	SPE90	SPE90	SPE90	DSEP		

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

Secondary Eclipse Parameters for KIC 007678434-02 / KOI 0892.02

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-48 ± 12	$1.90^{+1.24}_{-1.18}$	1379^{+35}_{-39}	3459^{+1421}_{-528}	16^{+82}_{-11}
Alt.	-45 ± 13	$1.84^{+1.29}_{-1.09}$	1378^{+33}_{-39}	3458^{+1342}_{-530}	15^{+75}_{-10}

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 $A_{obs} \gg 1.0$

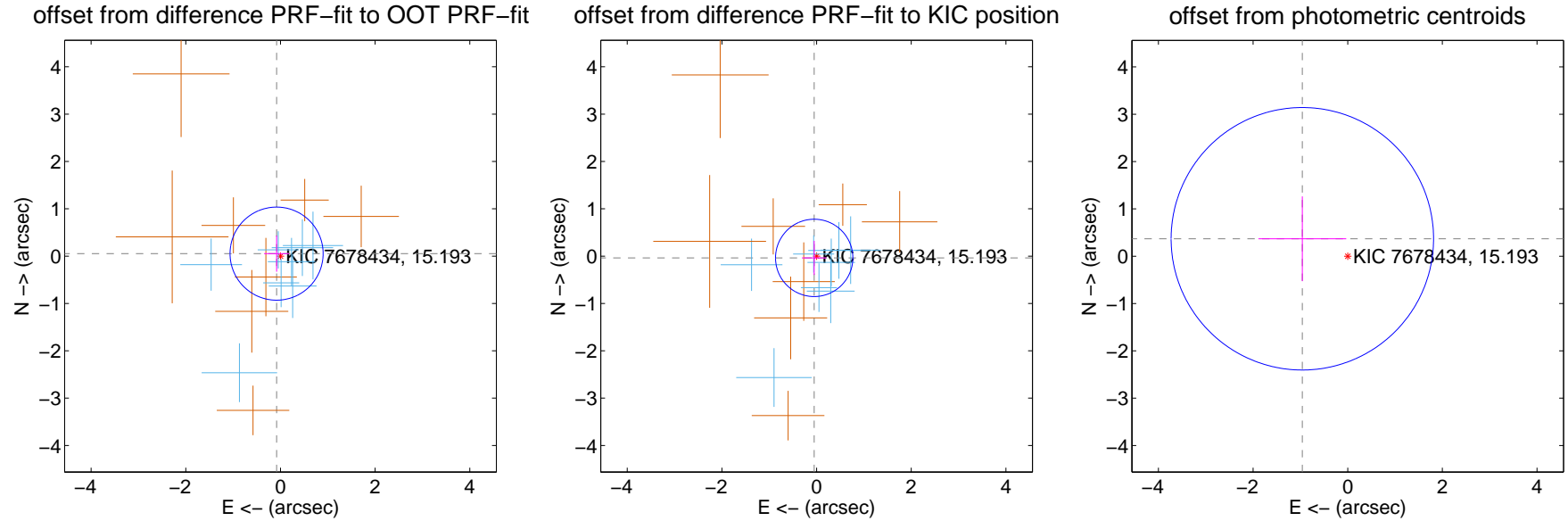
DV Centroid Data

Supplemental centroid analysis for 007678434-02. Kepler magnitude: 15.19. Transit SNR 14.93

There are 8 quarters with good PRF difference image offsets

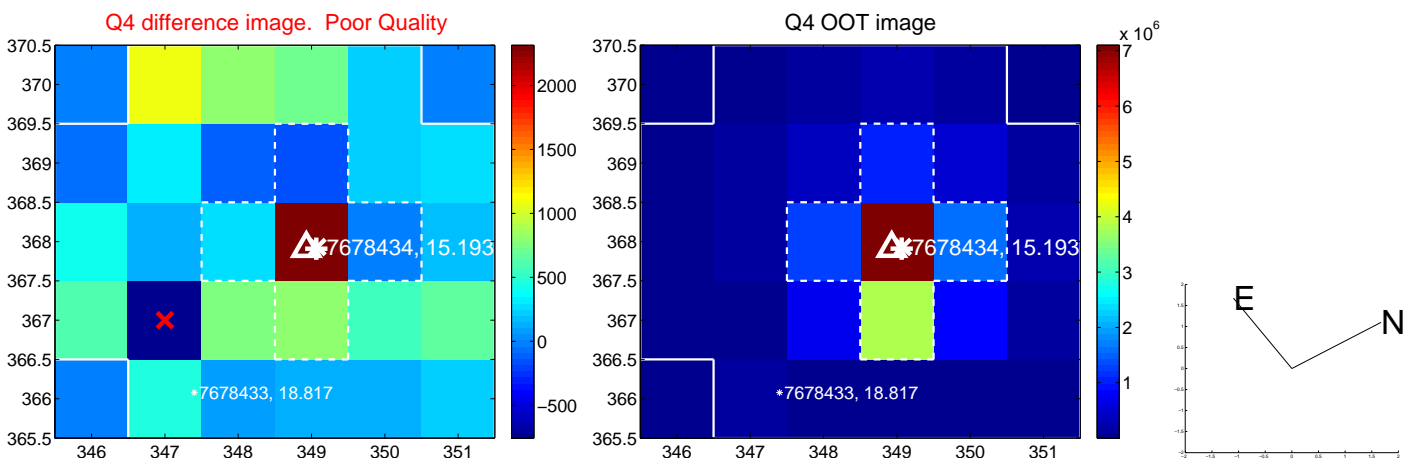
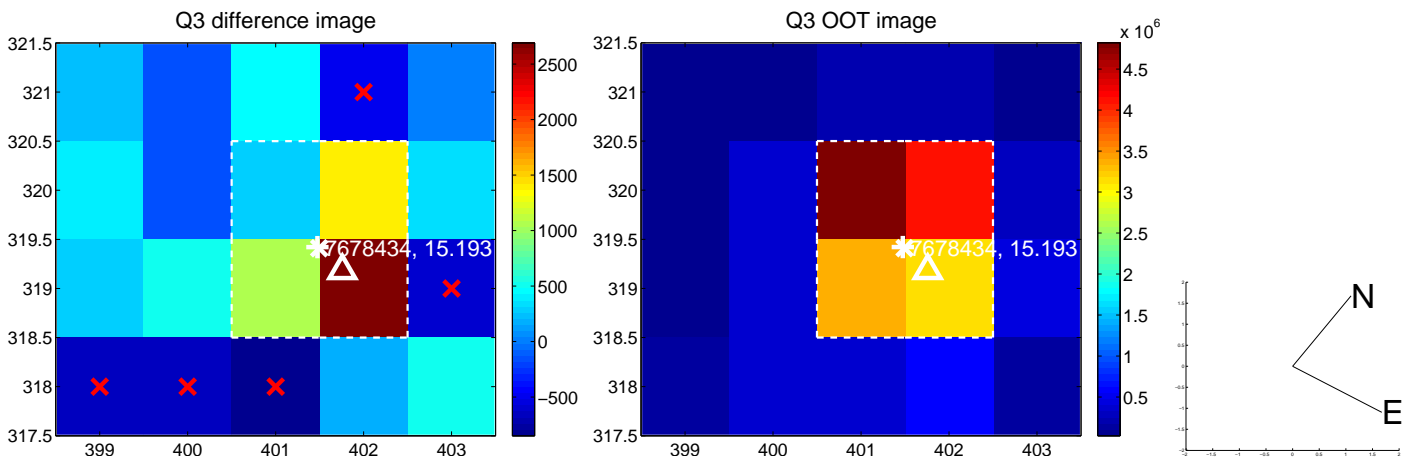
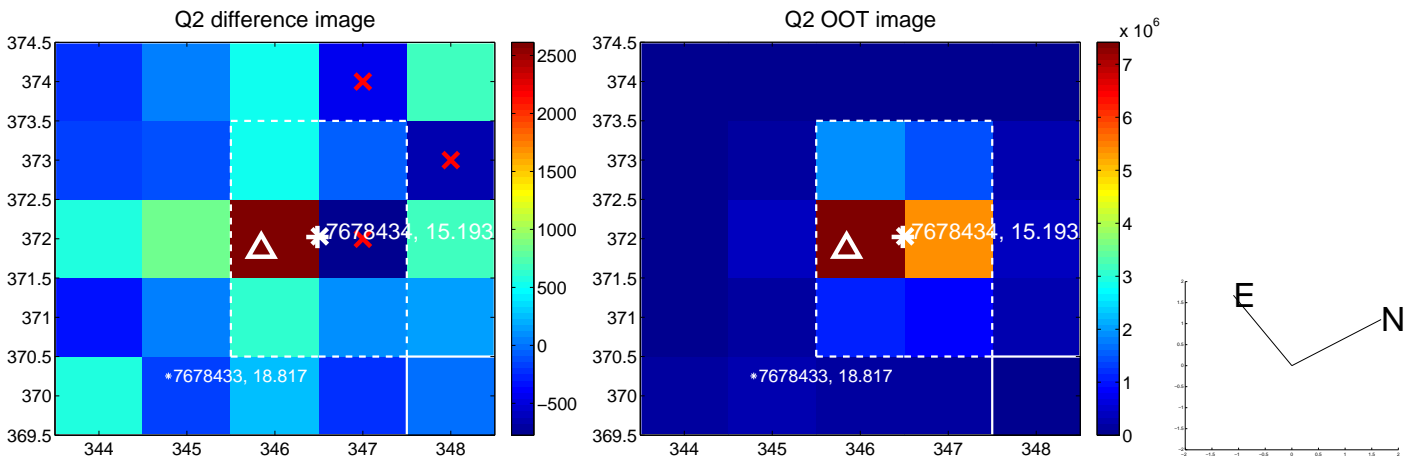
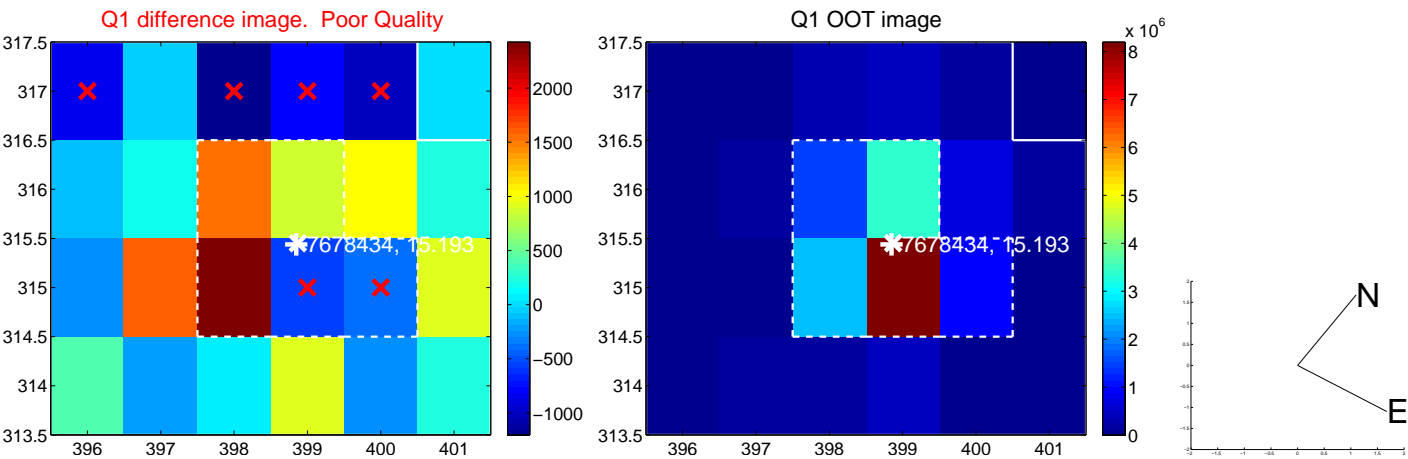
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.097 ± 0.328	0.30	0.082 ± 0.266	0.053 ± 0.383
PRF-fit source offset from KIC position	0.063 ± 0.272	0.23	0.050 ± 0.258	-0.037 ± 0.359
photometric centroid source offset	1.03 ± 0.92	1.11	0.96 ± 0.93	0.37 ± 0.90

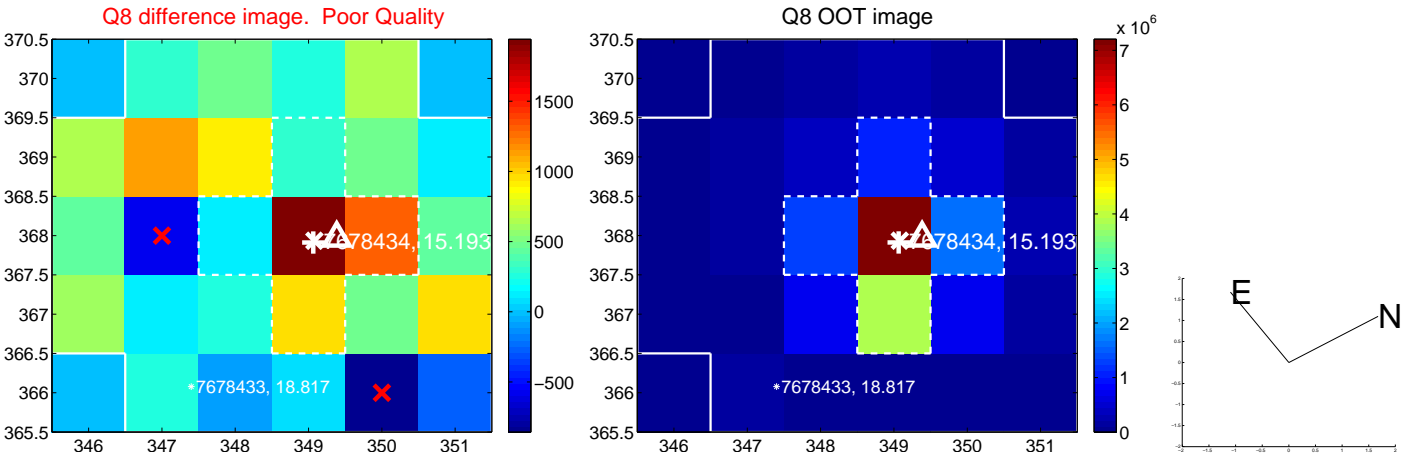
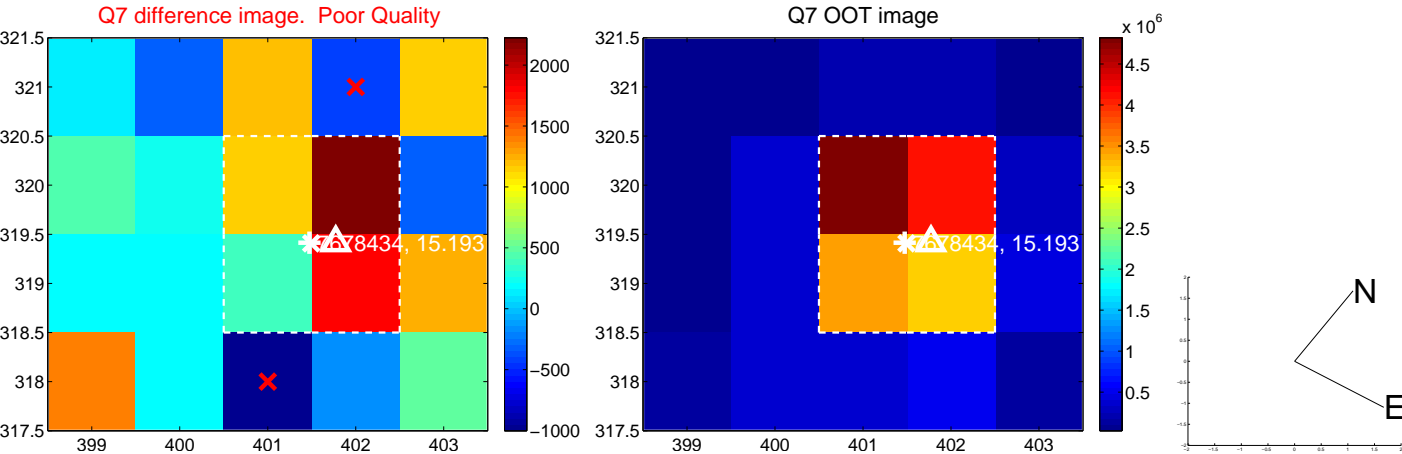
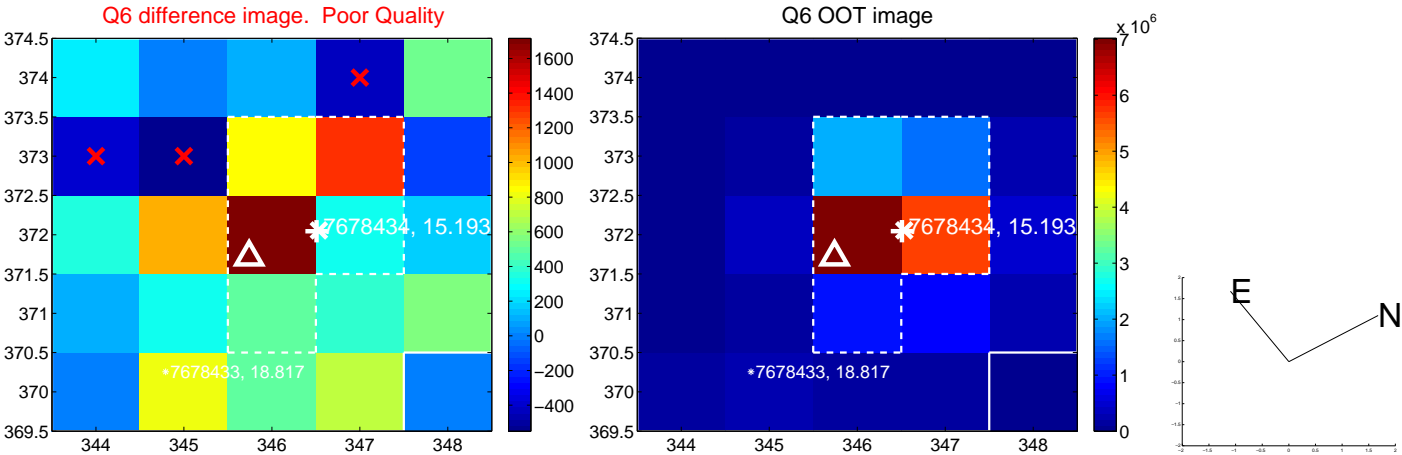
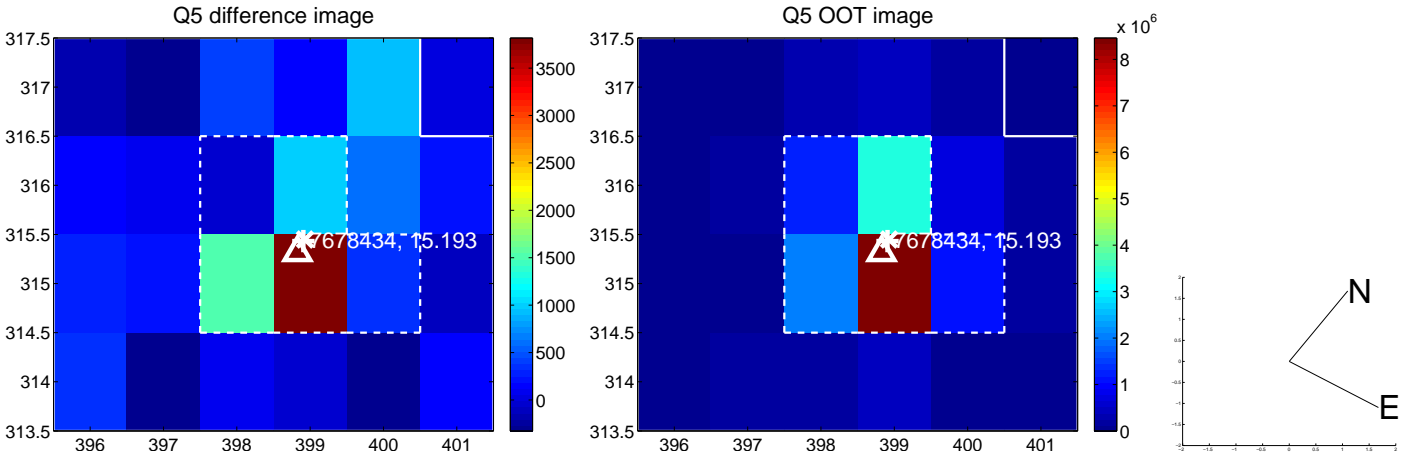


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

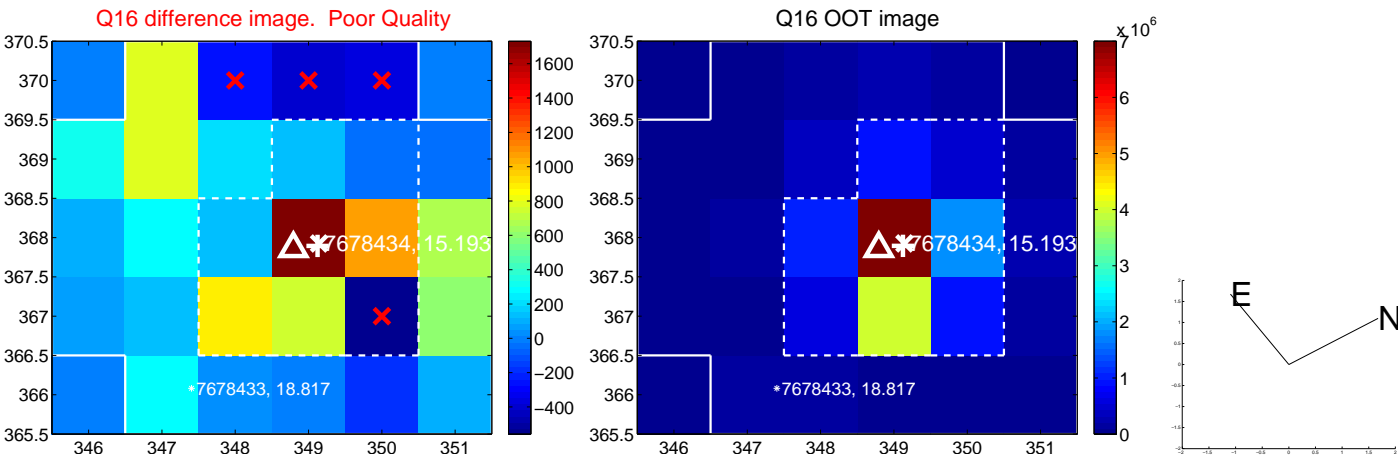
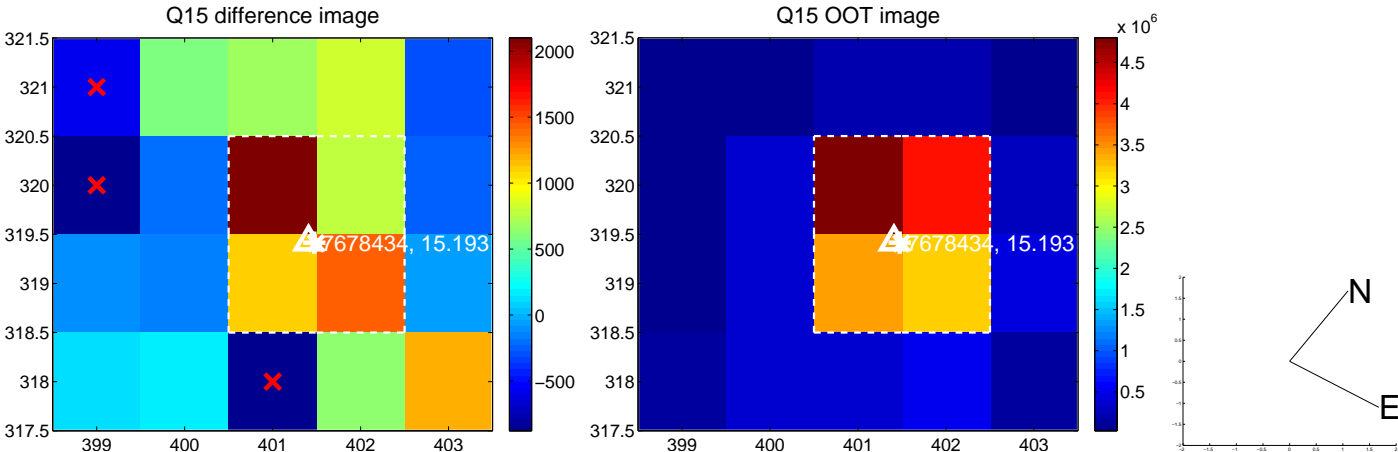
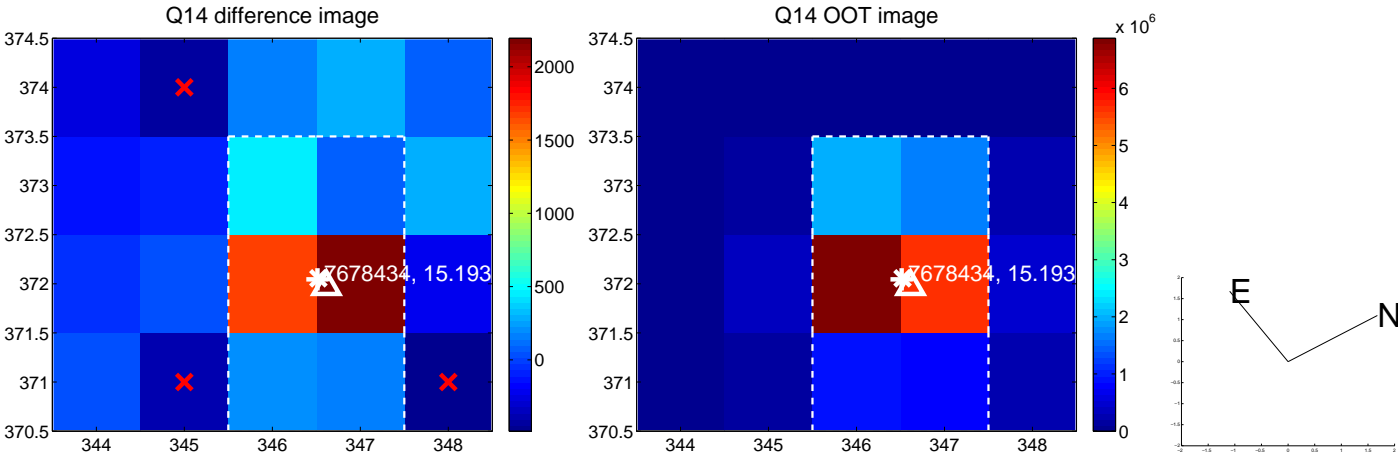
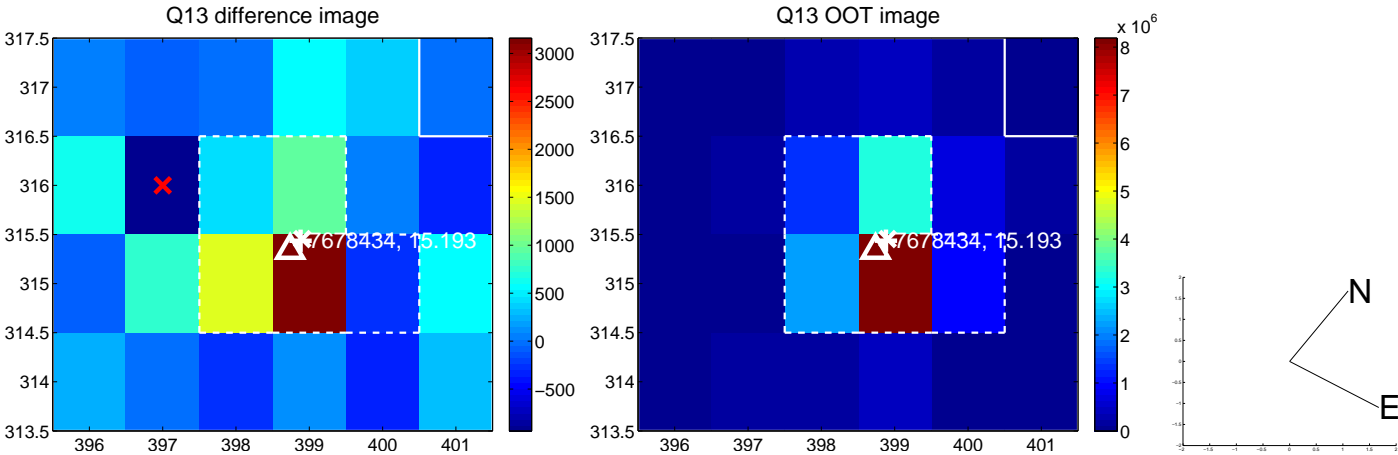
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



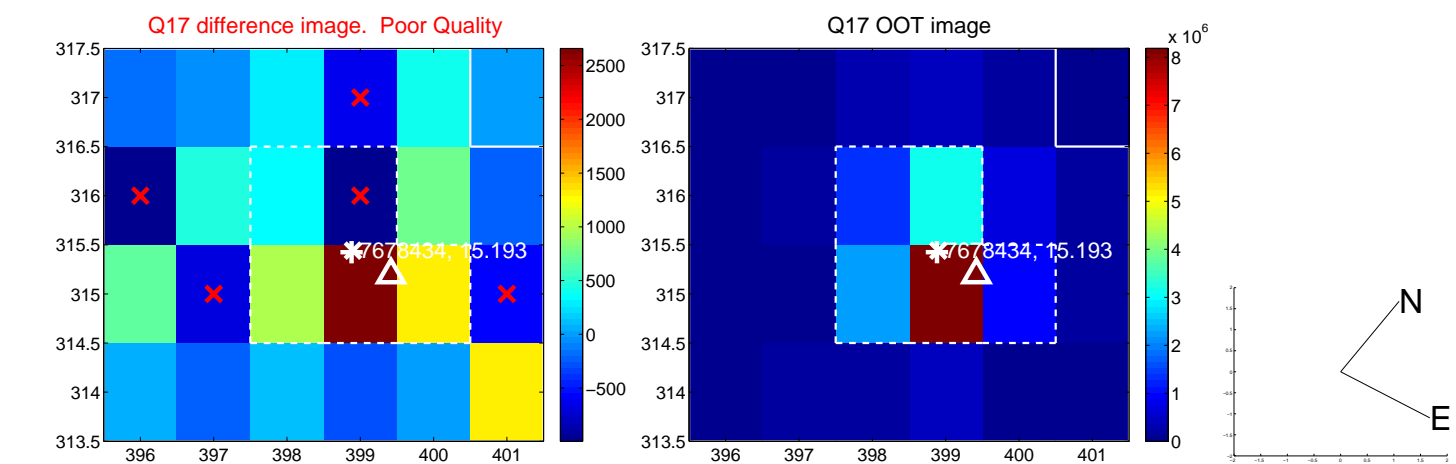
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



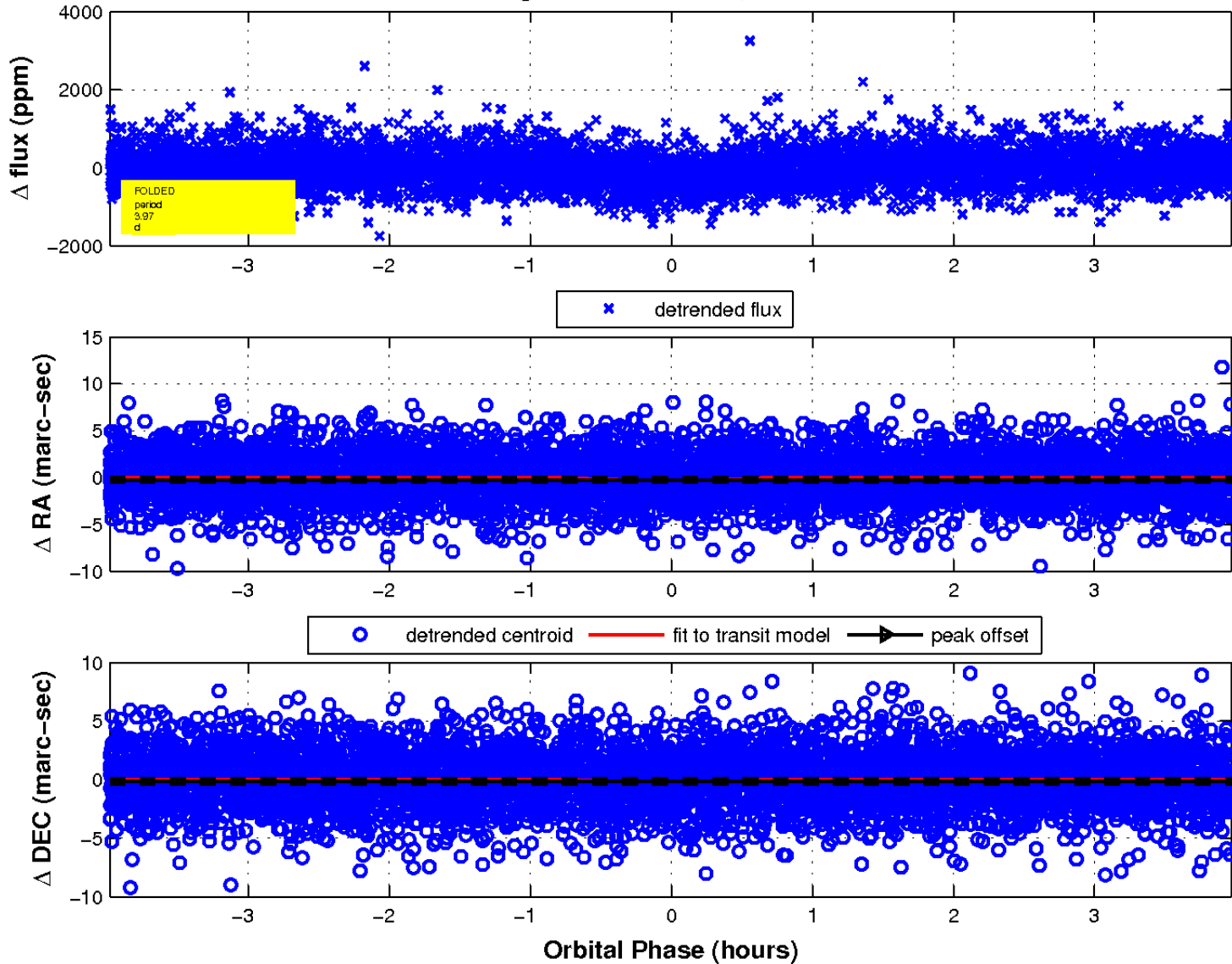
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 2 of 2



UKIRT Image

Declination

