

KIC 011657614

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})
011657614-01	OBS	3370.02	5.942173	133.819444	251.2	2.503	14.3	16.0	0.81	4891	1.56	95.44
011657614-02	OBS	3370.01	24.352797	147.181943	354.5	2.648	9.8	11.2	0.81	4891	1.79	14.55

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011657614-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT
011657614-02	OBS	PC	0.90	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.

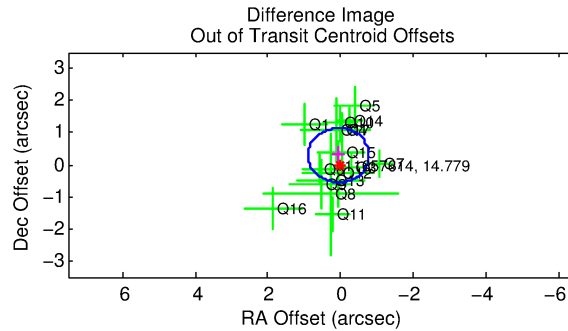
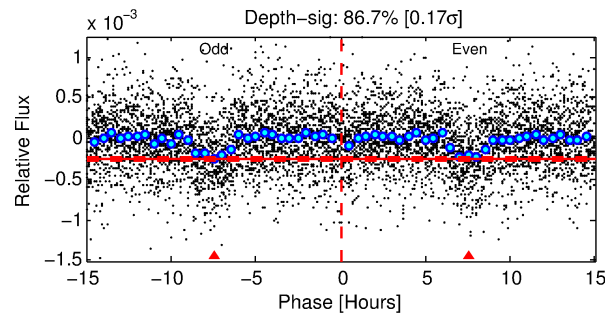
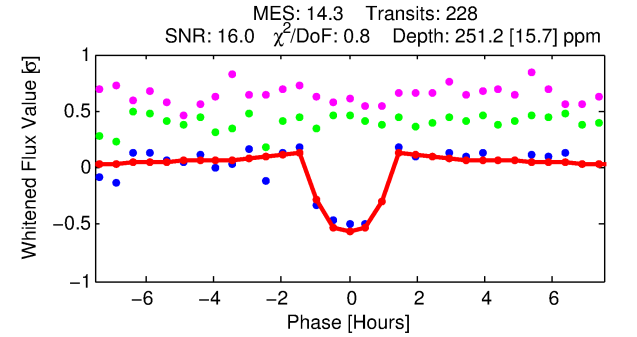
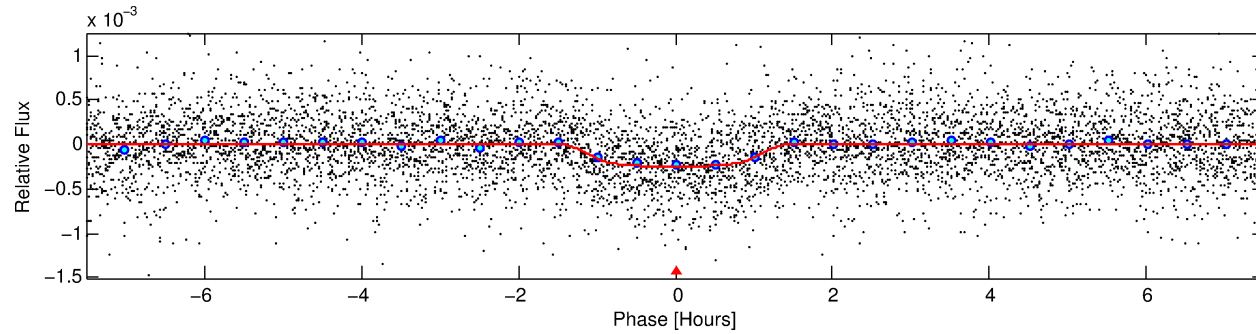
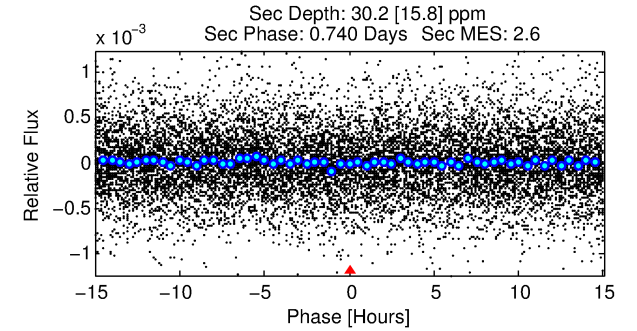
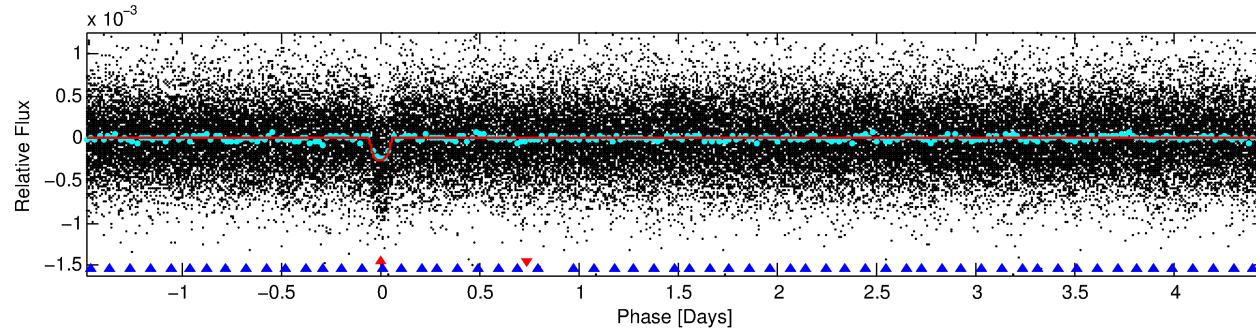
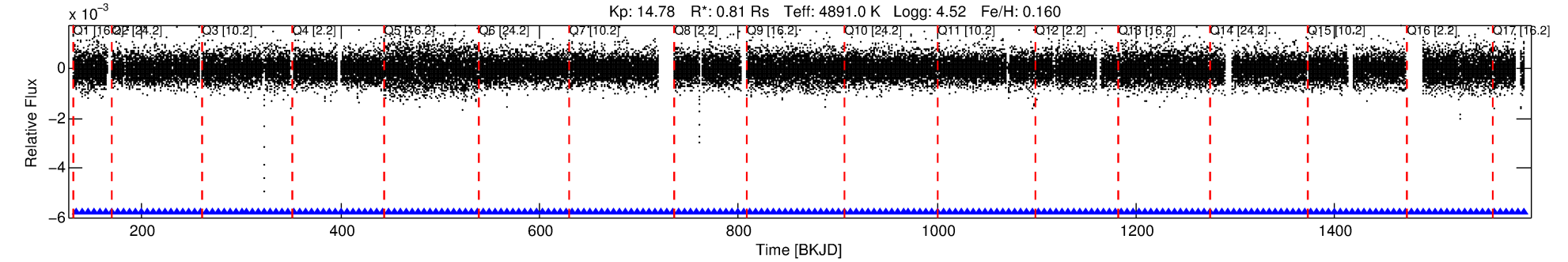
Ephemeris Match Information For 011657614-01

No Significant Match Found

DV One-Page Summary

KIC: 11657614 Candidate: 1 of 2 Period: 5.942 d

KOI: K03370.02 Corr: 0.953



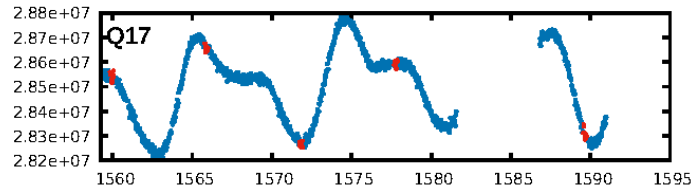
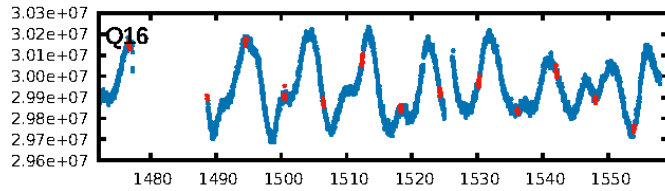
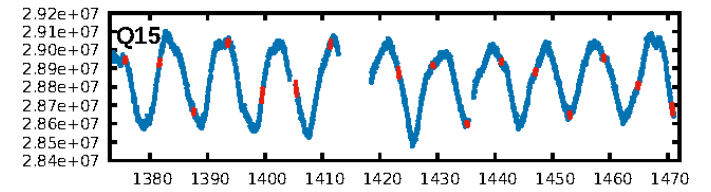
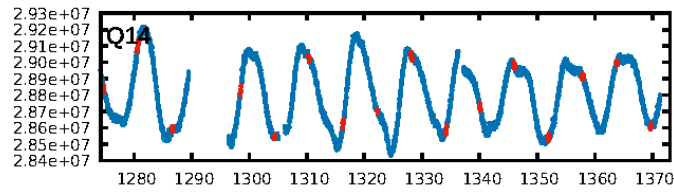
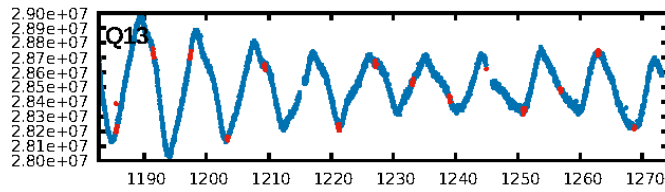
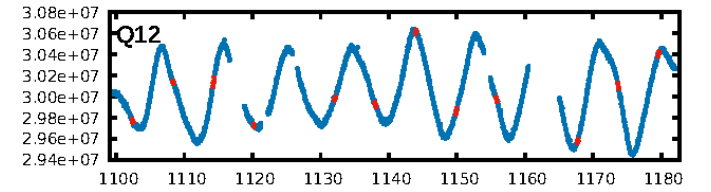
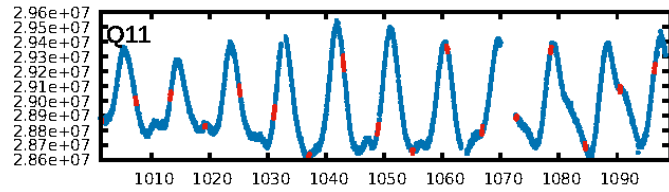
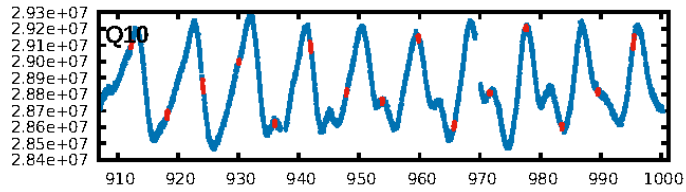
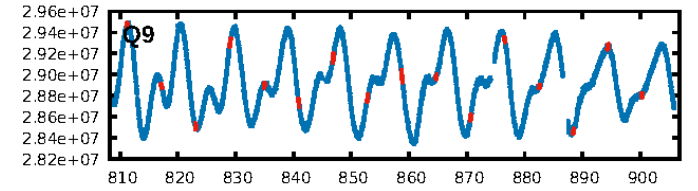
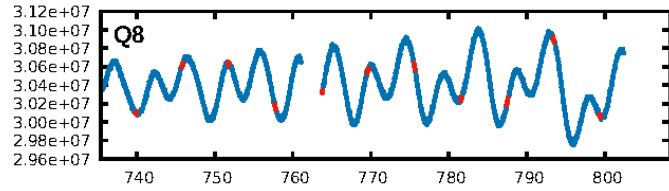
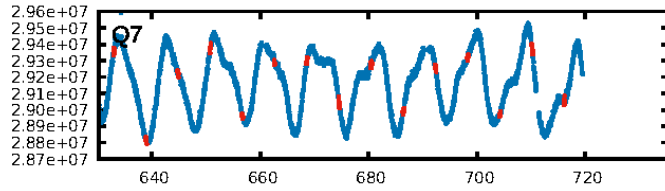
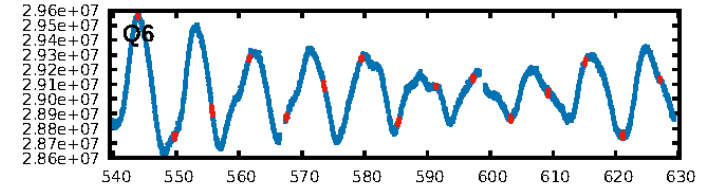
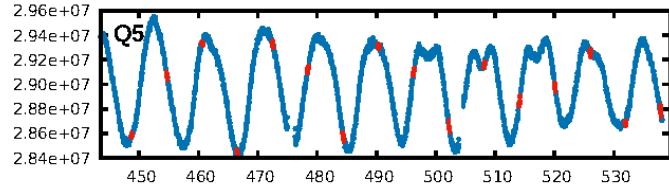
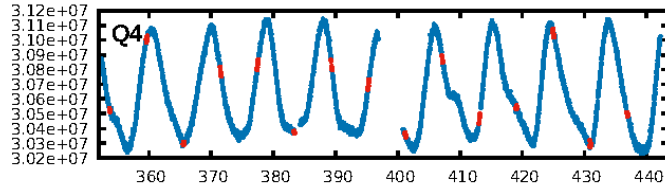
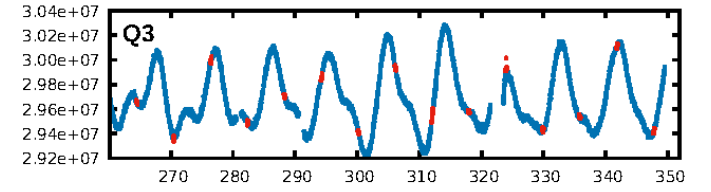
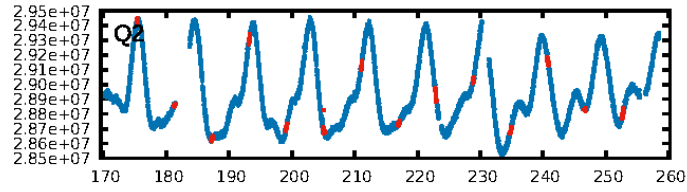
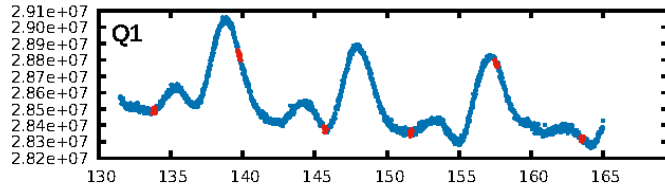
DV Fit Results:

Period = 5.94217 [0.00002] d
Epoch = 133.8194 [0.0025] BKJD
Rp/R* = 0.0178 [0.0064]
a/R* = 8.67 [11.88]
b = 0.90 [0.30]
Seff = 95.45 [12.49]
Teff = 797 [26] K
Rp = 1.56 [0.57] Re
a = 0.0590 [0.0041] AU
Ag = 23.64 [21.25] [1.07σ]
Teffp = 2717 [607] K [3.16σ]

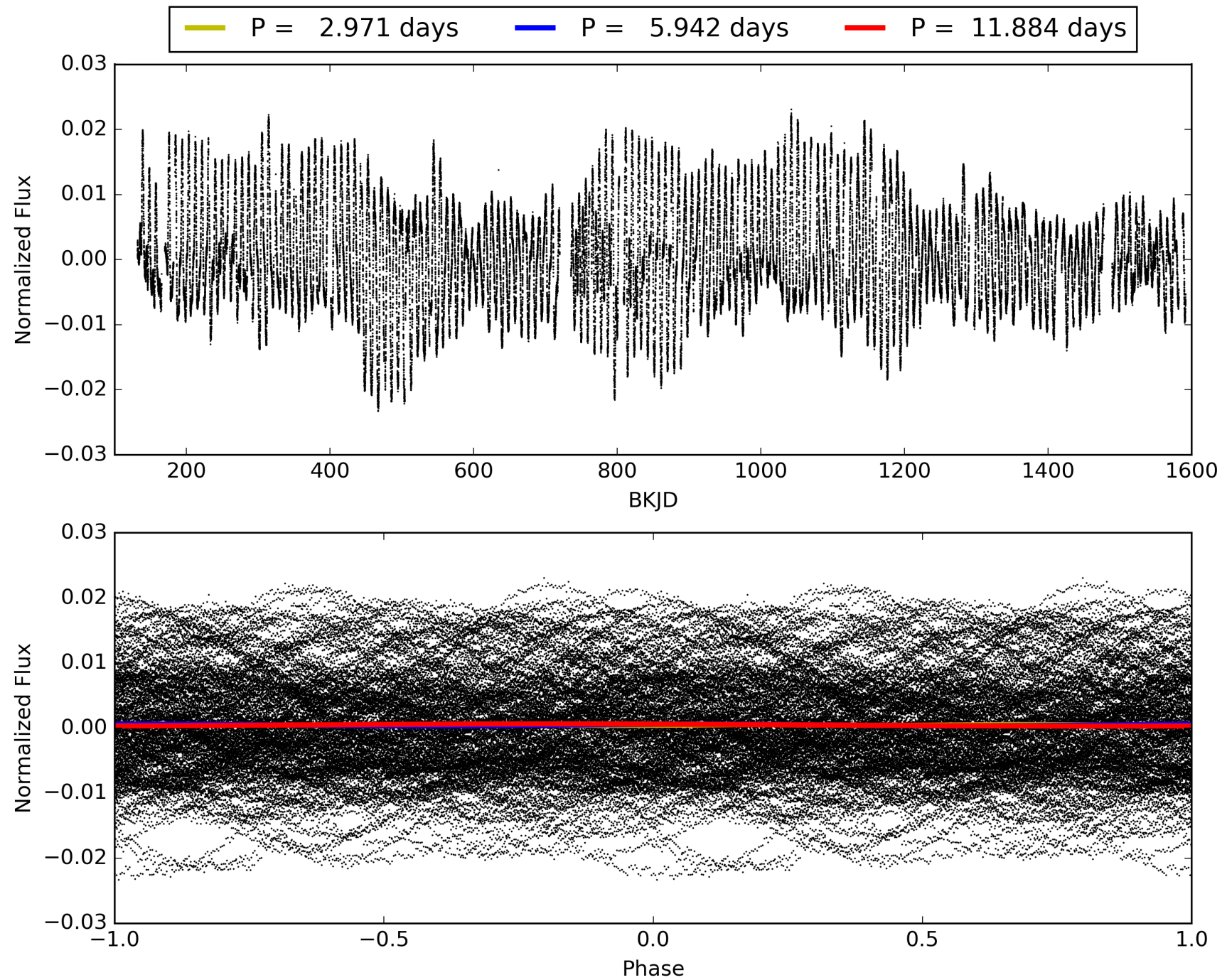
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [121.26σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 9.55e-45
RollingBand-fgt: 1.00 [217/217]
GhostDiagnostic-chr: 7.11
Centroid-sig: 4.7%
Centroid-so: 0.817 arcsec [1.16σ]
OotOffset-rm: 0.299 arcsec [1.06σ]
KicOffset-rm: 0.359 arcsec [1.26σ]
OotOffset-st: 3/4/4/5 [16]
KicOffset-st: 3/4/4/5 [16]
DiffImageQuality-fgm: 0.81 [13/16]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 011657614-01, PDC Light Curves

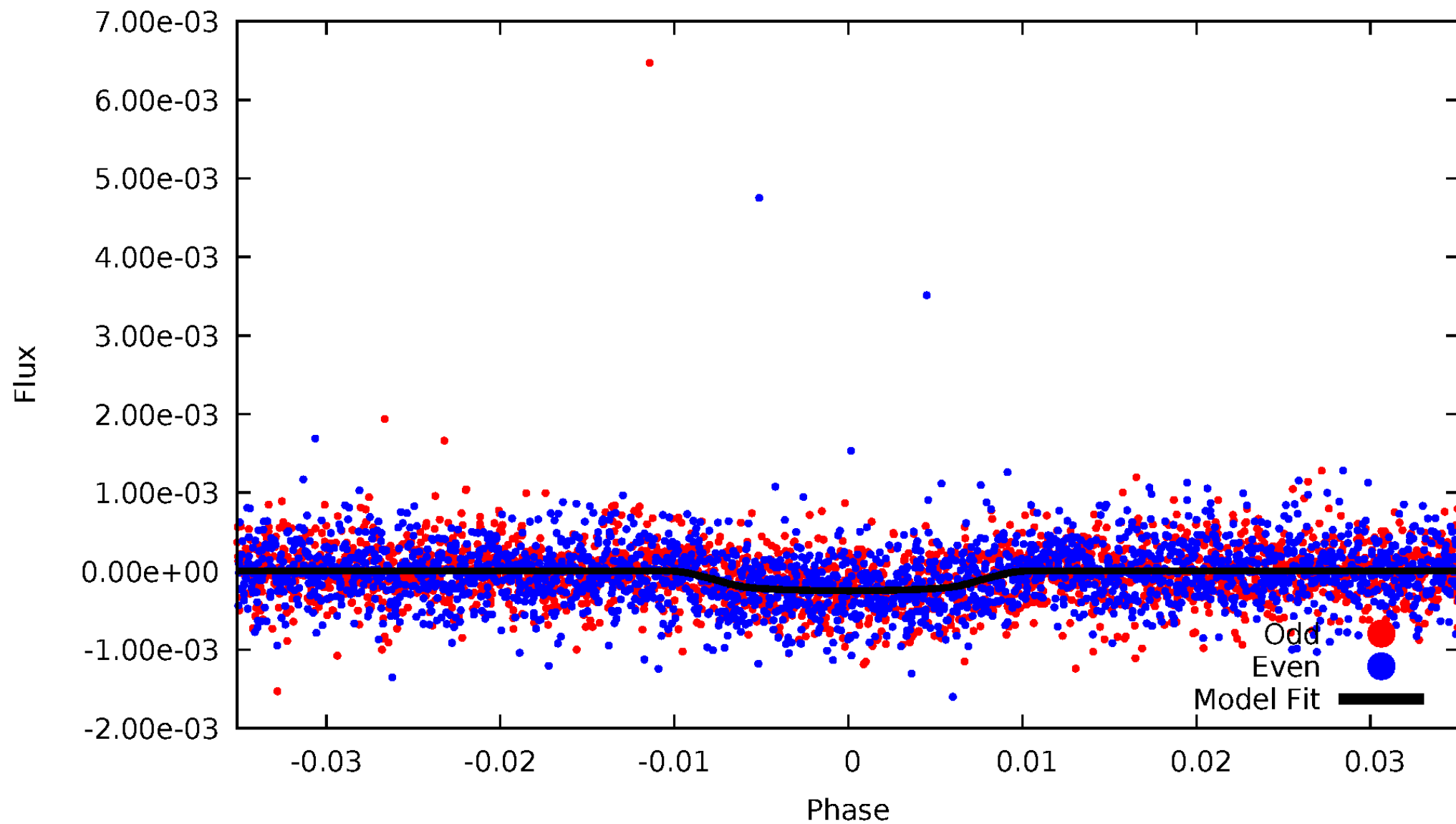


TCE 011657614-01



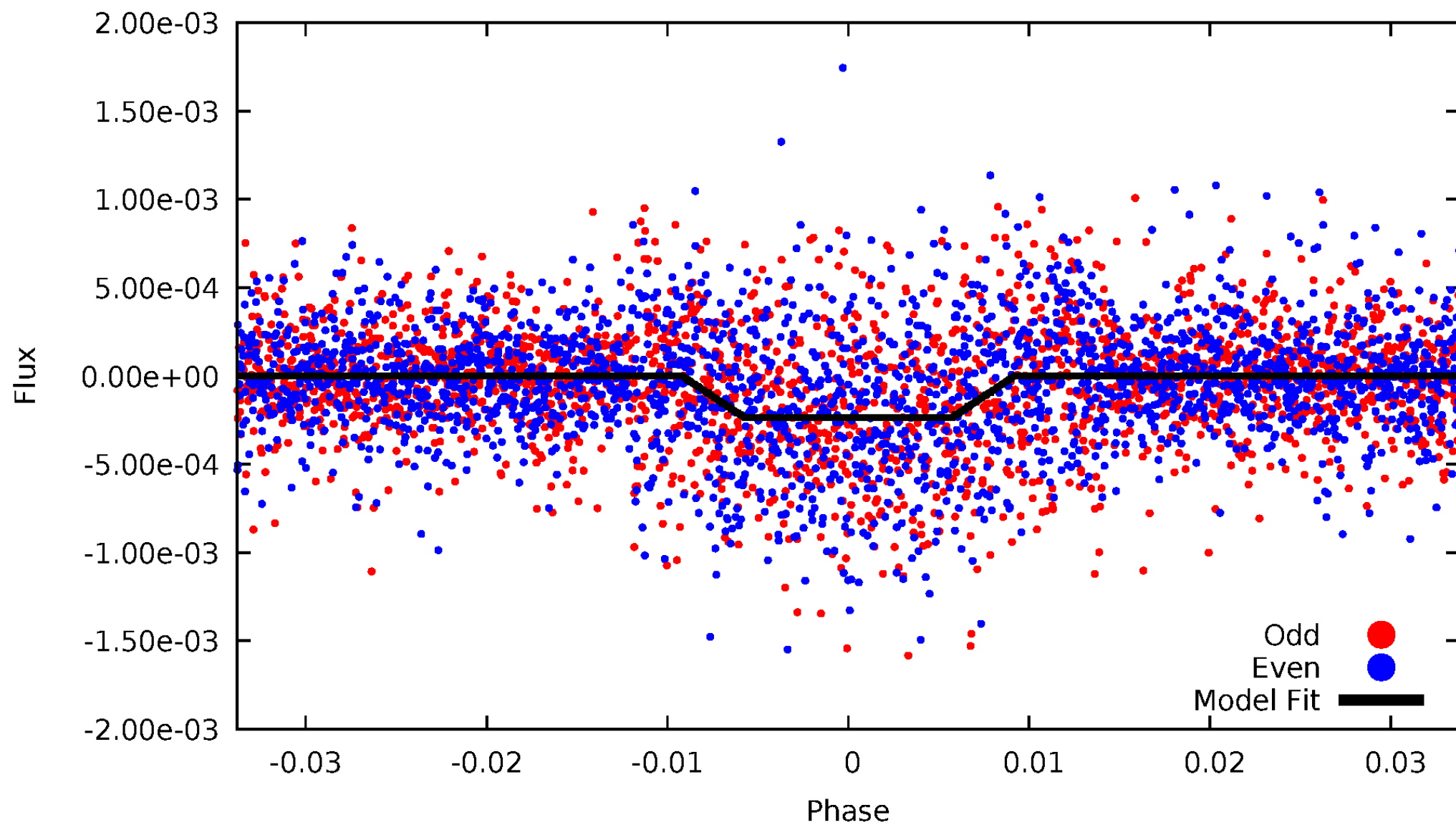
DV Odd/Even

TCE 011657614-01



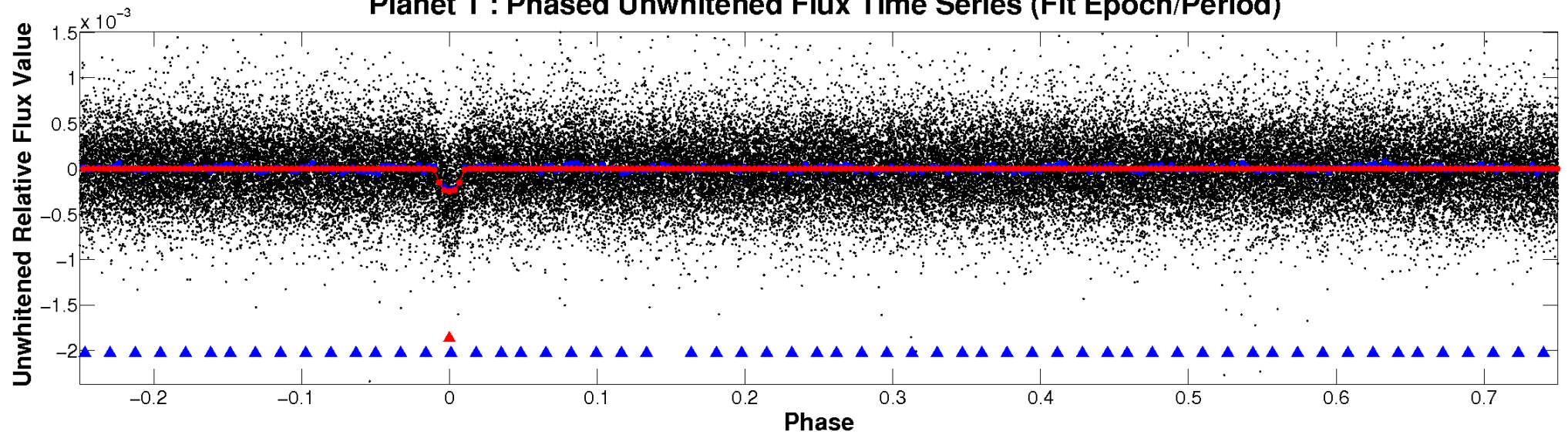
ALT Odd/Even

TCE 011657614-01

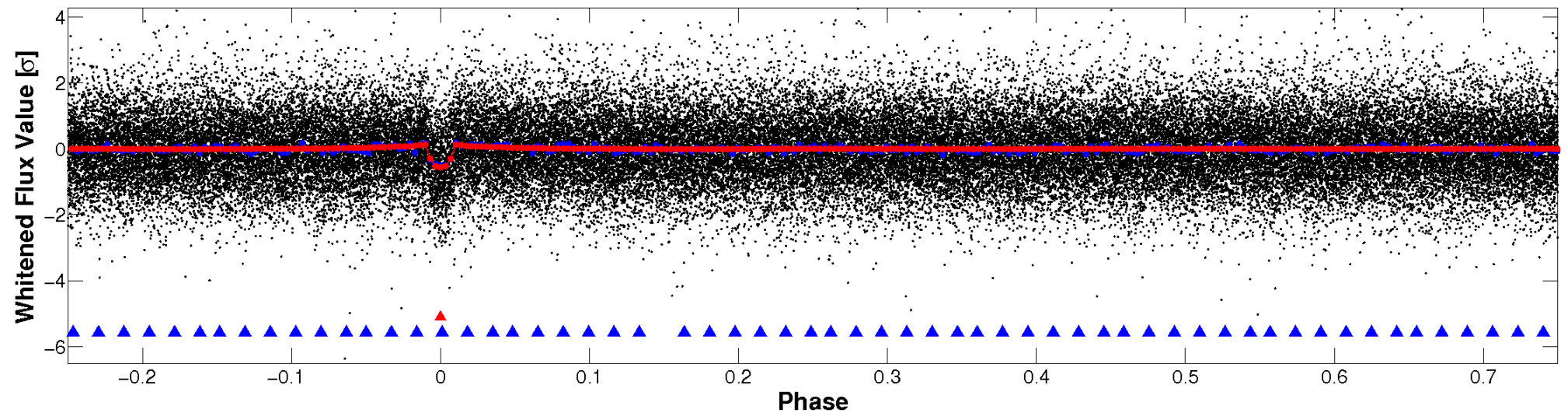


Non-Whitened Vs. Whitened Light Curve

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

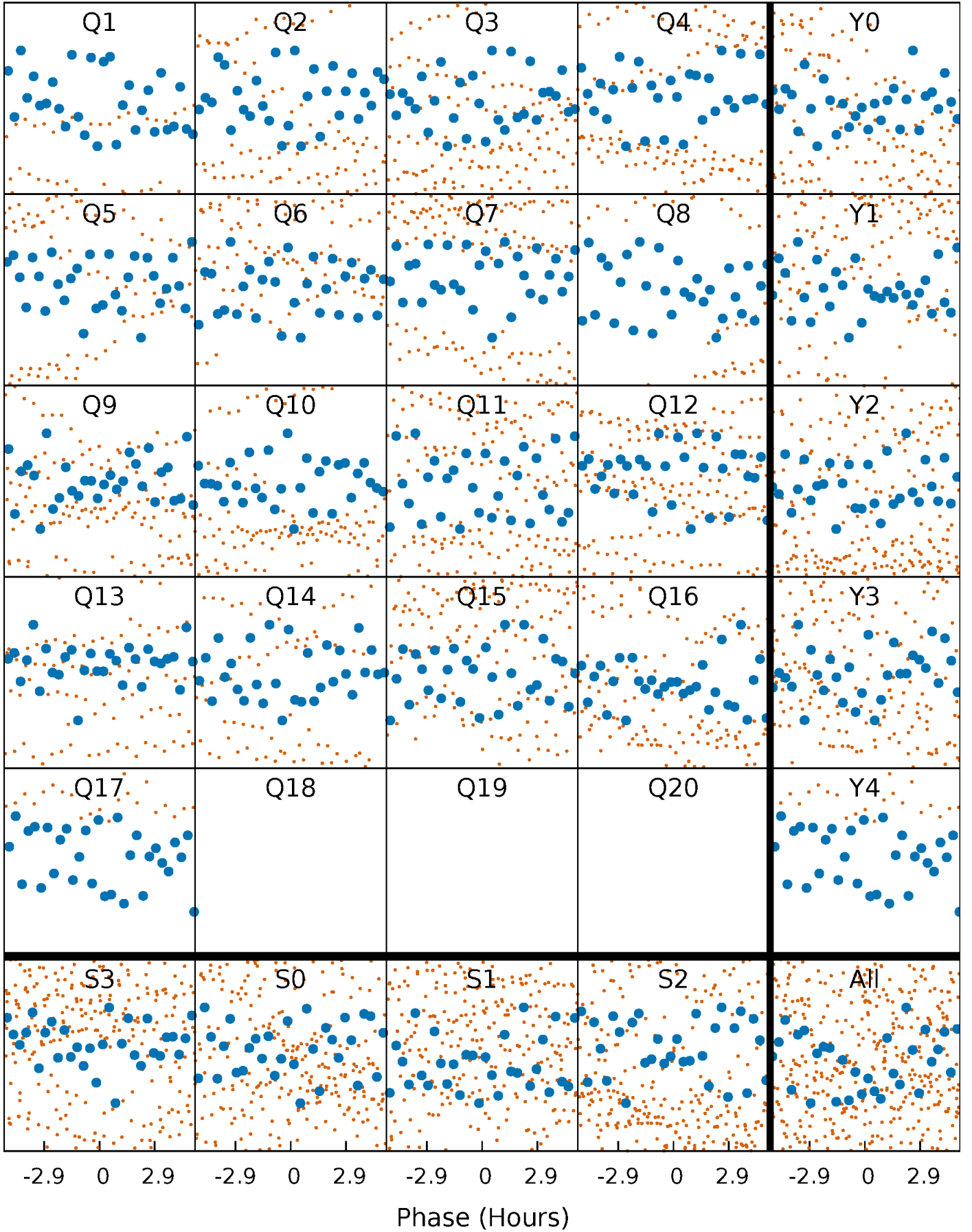


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



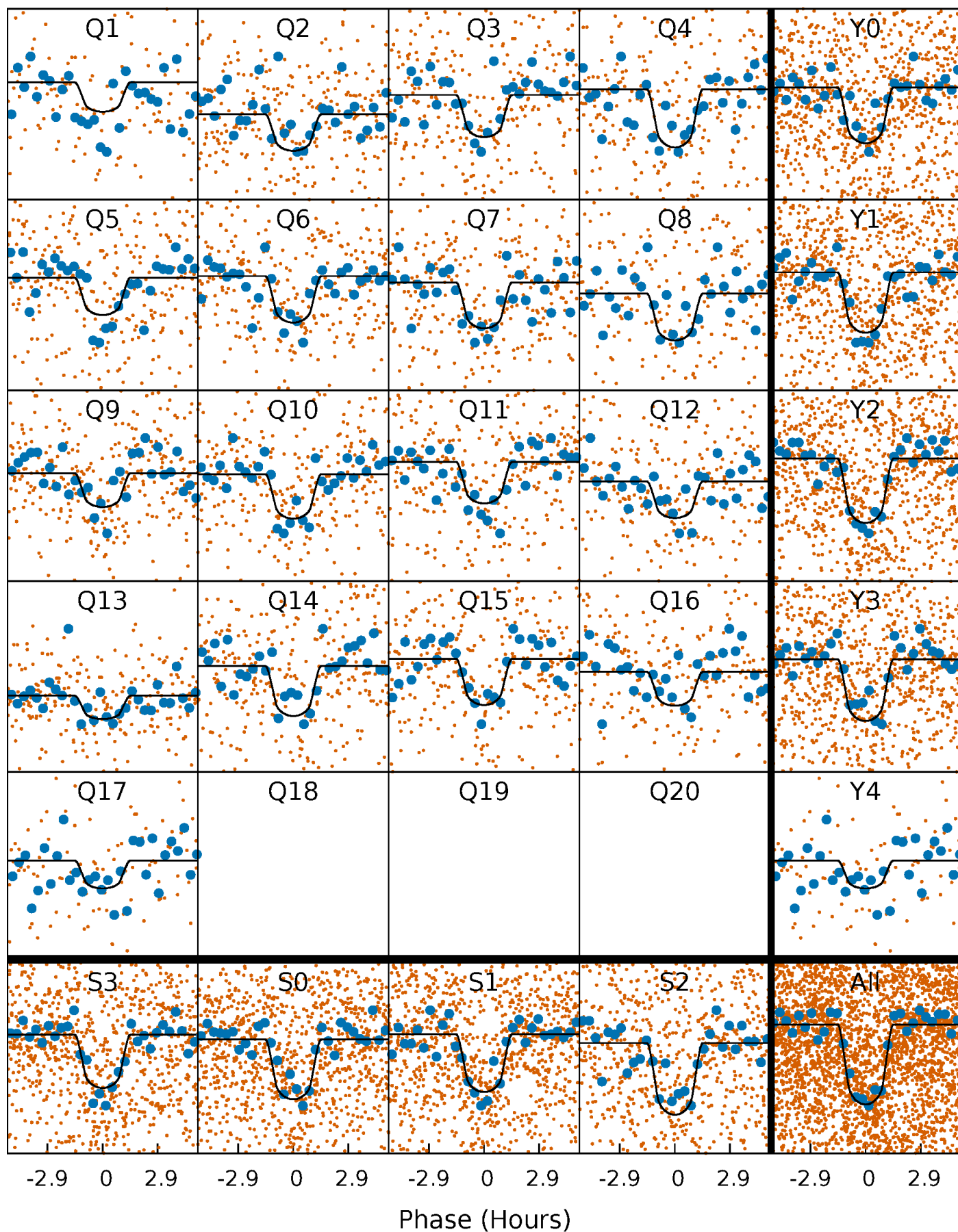
PDC Quarter-Phased Transit Curves

TCE 011657614-01 P= 5.942173 Days $T_0=133.819444$ (BKJD)



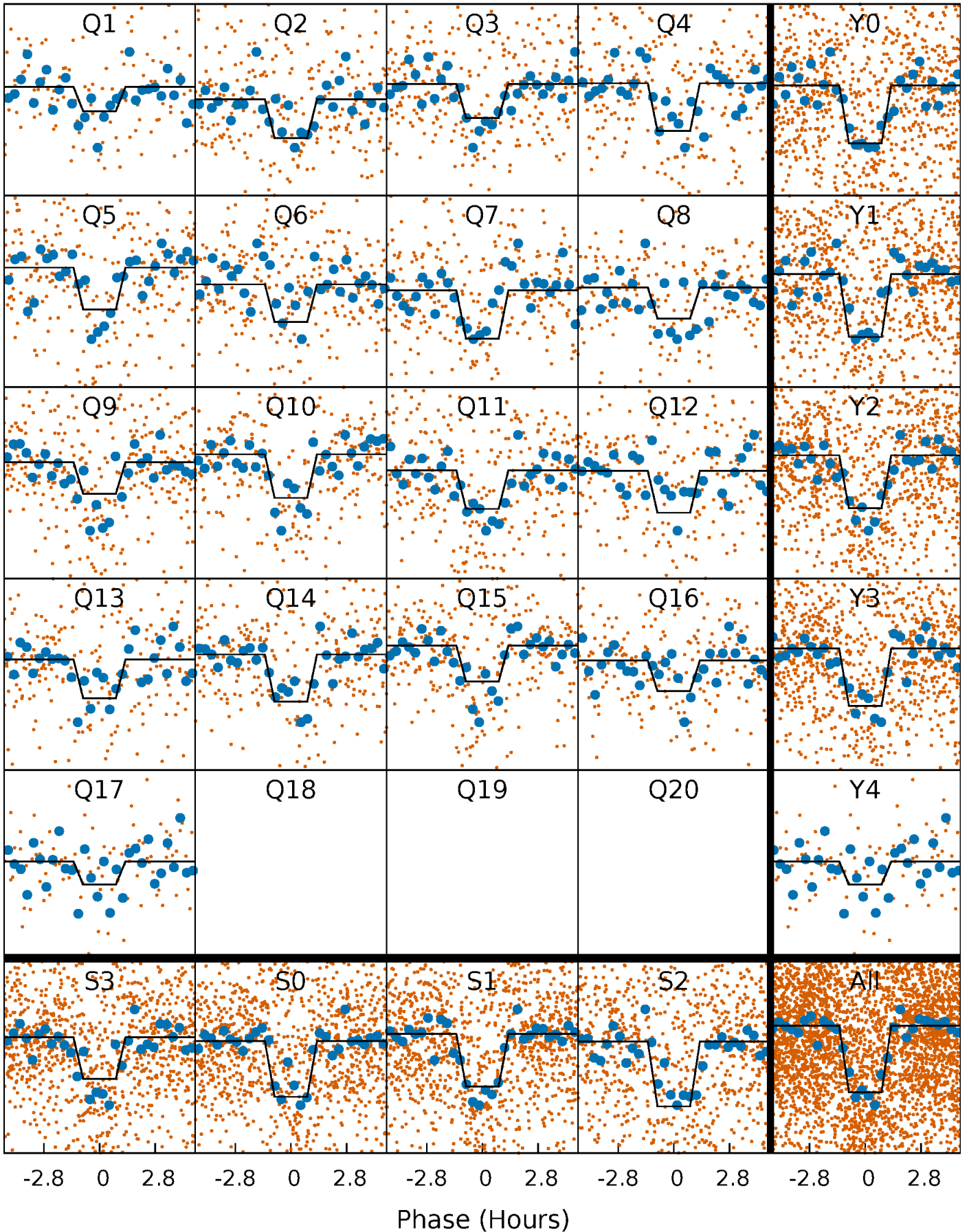
DV Quarter-Phased Transit Curves

TCE 011657614-01 P= 5.942173 Days $T_0=133.819444$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

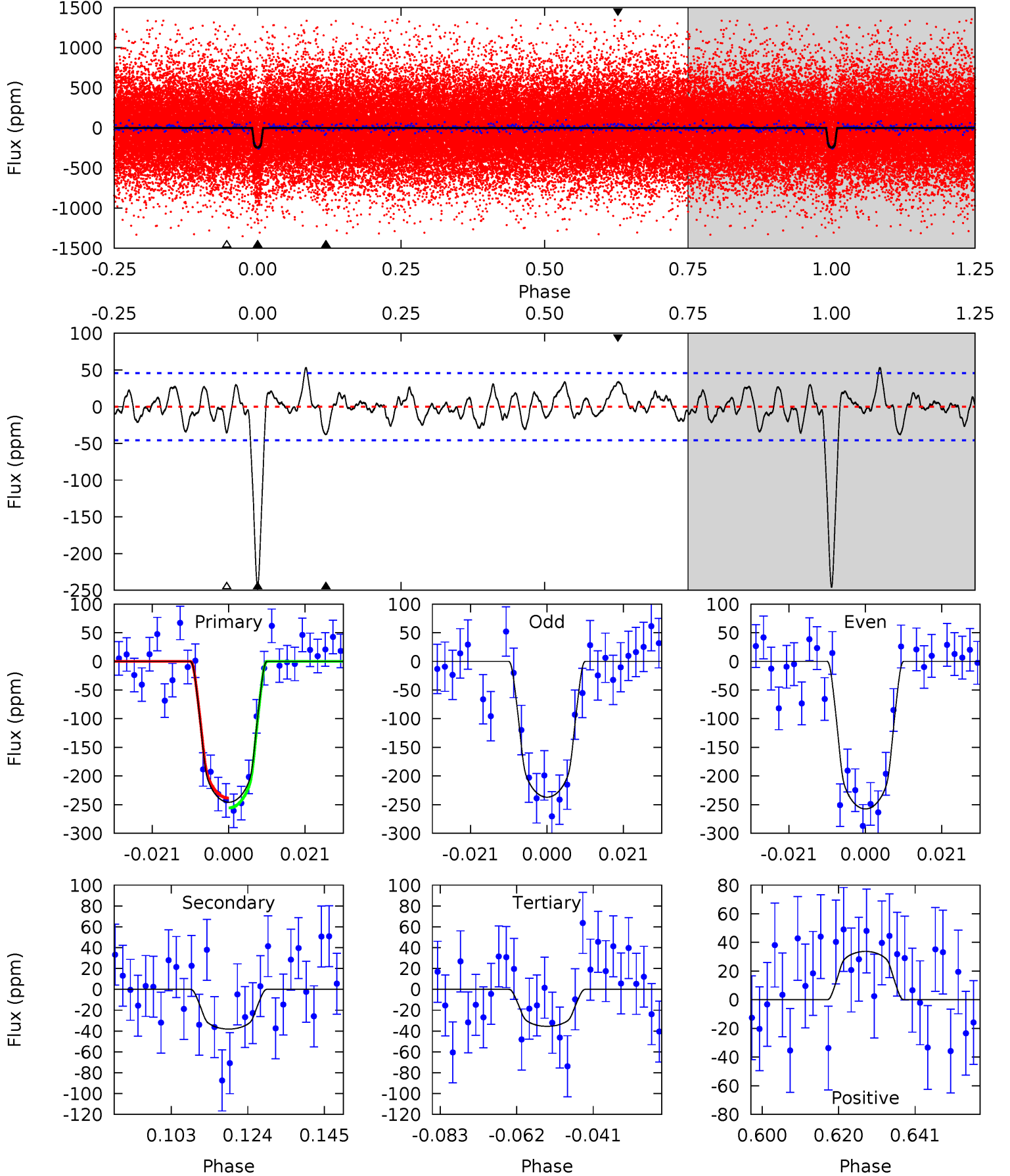
TCE 011657614-01 P= 5.942204 Days $T_0=133.815034$ (BKJD)



DV Model-Shift Uniqueness Test

011657614-01, P = 5.942173 Days, E = 127.877271 Days

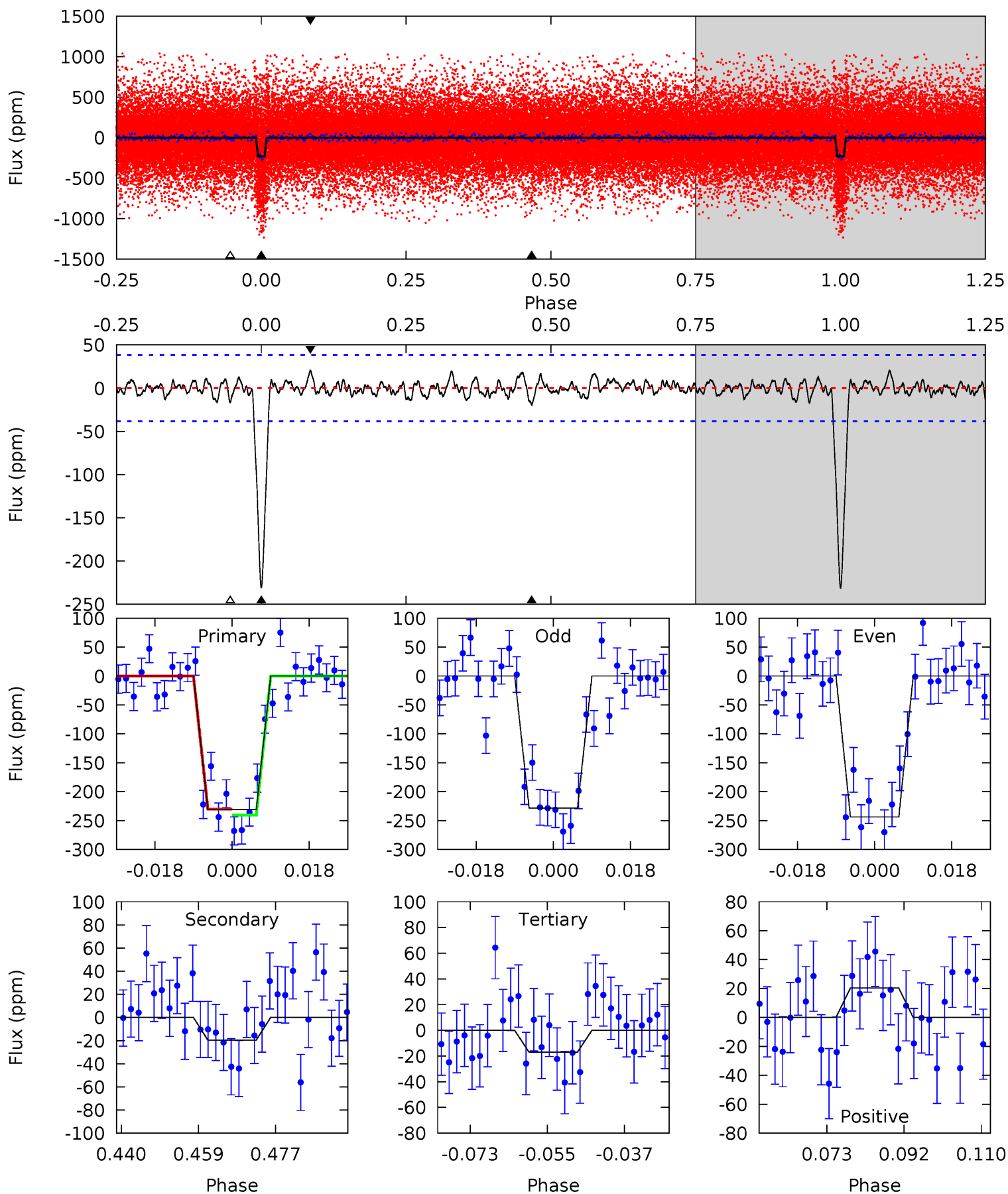
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
26.3	4.08	3.80	3.61	4.89	2.31	1.57	22.5	22.7	0.28	0.47	1.10	1.06	0.18	0.92



Alt Model-Shift Uniqueness Test

011657614-01, P = 5.942204 Days, E = 127.872830 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
29.6	2.50	2.17	2.60	4.91	2.36	0.83	27.4	27.0	0.33	-0.09	0.98	1.04	0.08	0.68



Stellar Parameters For KIC 011657614

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4891^{+78}_{-78}	$4.516^{+0.068}_{-0.020}$	$0.160^{+0.150}_{-0.150}$	$0.805^{+0.028}_{-0.056}$	$0.776^{+0.052}_{-0.028}$	$2.095^{+0.491}_{-0.181}$
	+2%/-2%	+2%/-0%	+94%/-94%	+3%/-7%	+7%/-4%	+23%/-9%
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 011657614-01 / KOI 3370.02

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-38 ± 9	$1.52^{+0.61}_{-0.58}$	1105^{+24}_{-27}	3361^{+540}_{-337}	32^{+48}_{-16}
Alt.	-20 ± 8	$1.35^{+0.55}_{-0.55}$	1105^{+23}_{-27}	3153^{+575}_{-358}	21^{+39}_{-12}

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

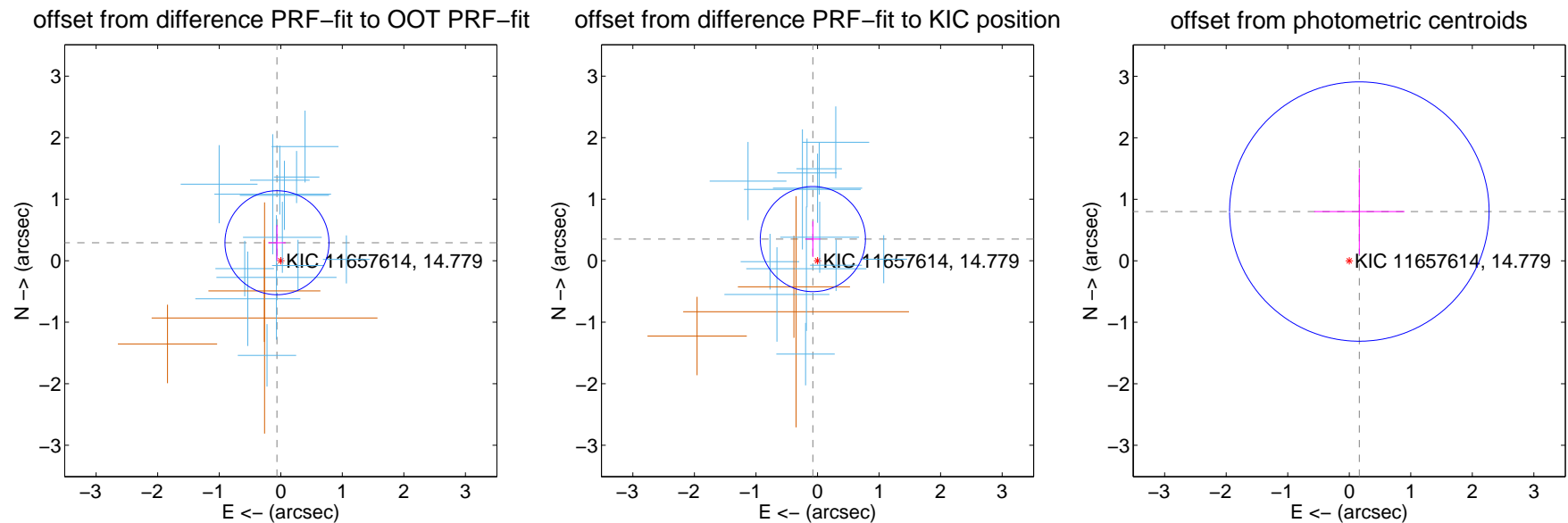
DV Centroid Data

Supplemental centroid analysis for 011657614-01. Kepler magnitude: 14.78. Transit SNR 16.00

There are 13 quarters with good PRF difference image offsets

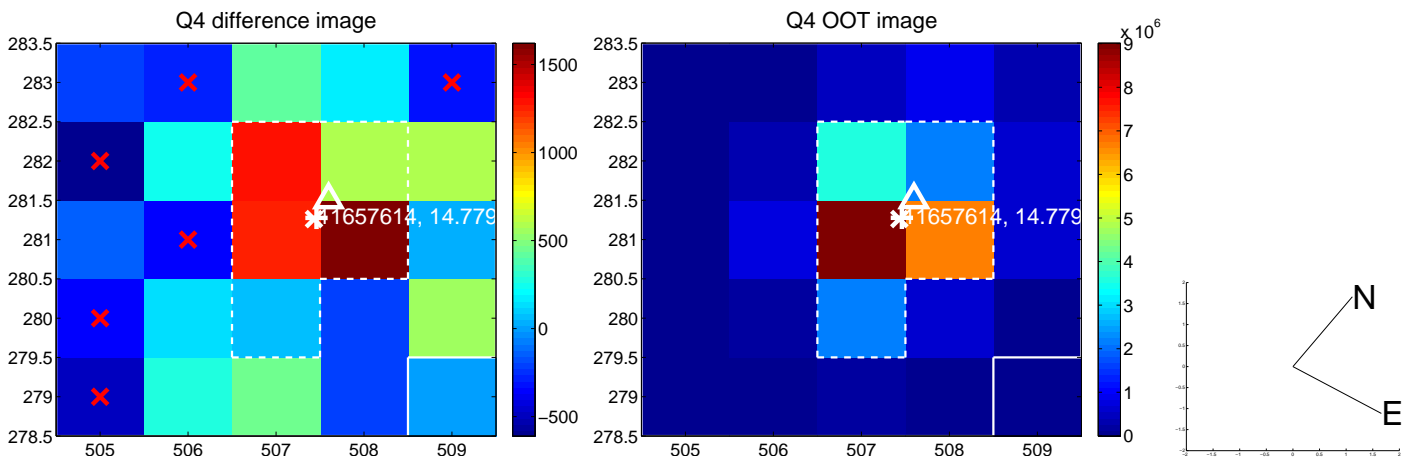
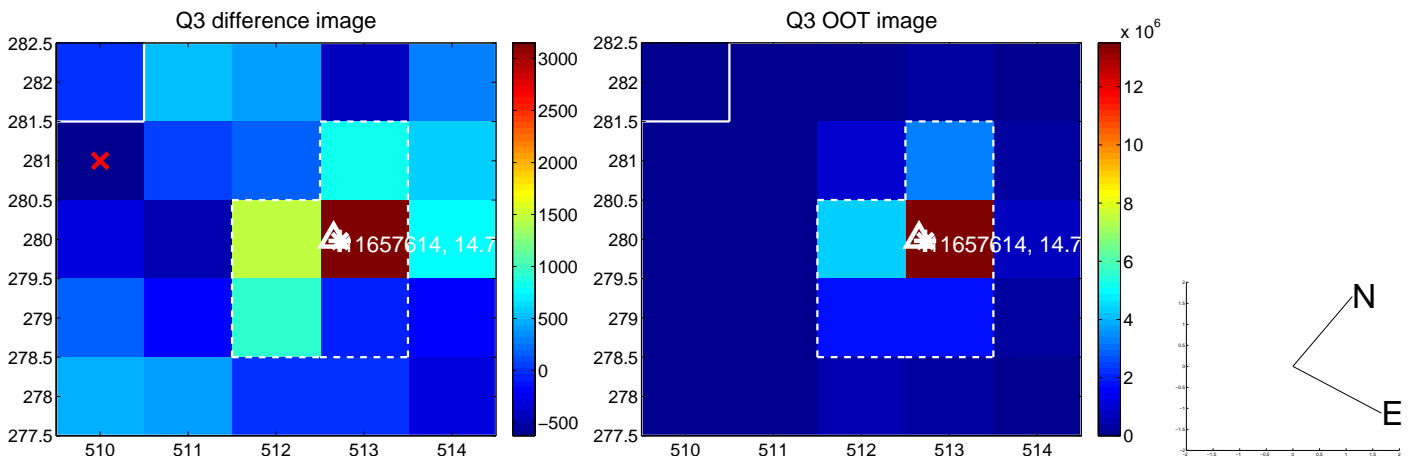
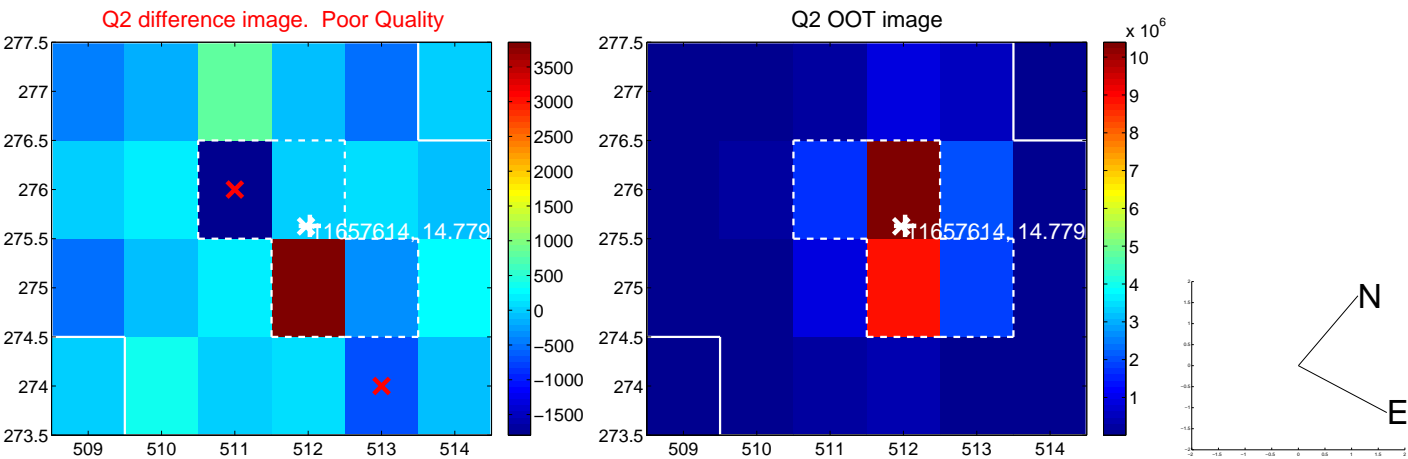
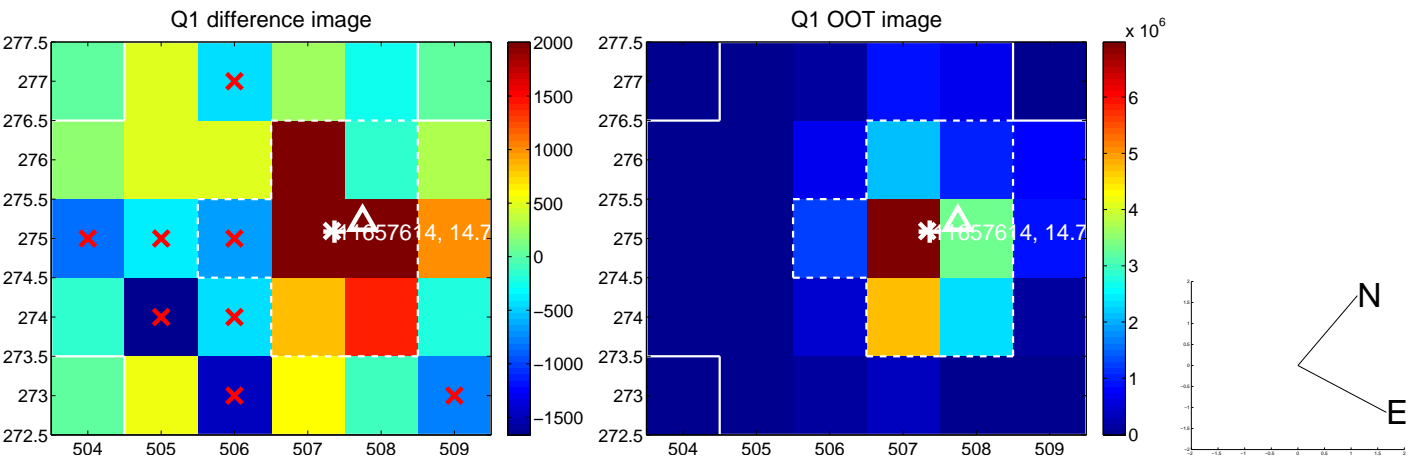
The direct PRF centroid is offset from the target star catalog position by about 0.14 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.299 ± 0.282	1.06	0.062 ± 0.141	0.292 ± 0.286
PRF-fit source offset from KIC position	0.359 ± 0.285	1.26	0.075 ± 0.124	0.351 ± 0.290
photometric centroid source offset	0.82 ± 0.70	1.16	-0.16 ± 0.73	0.80 ± 0.70

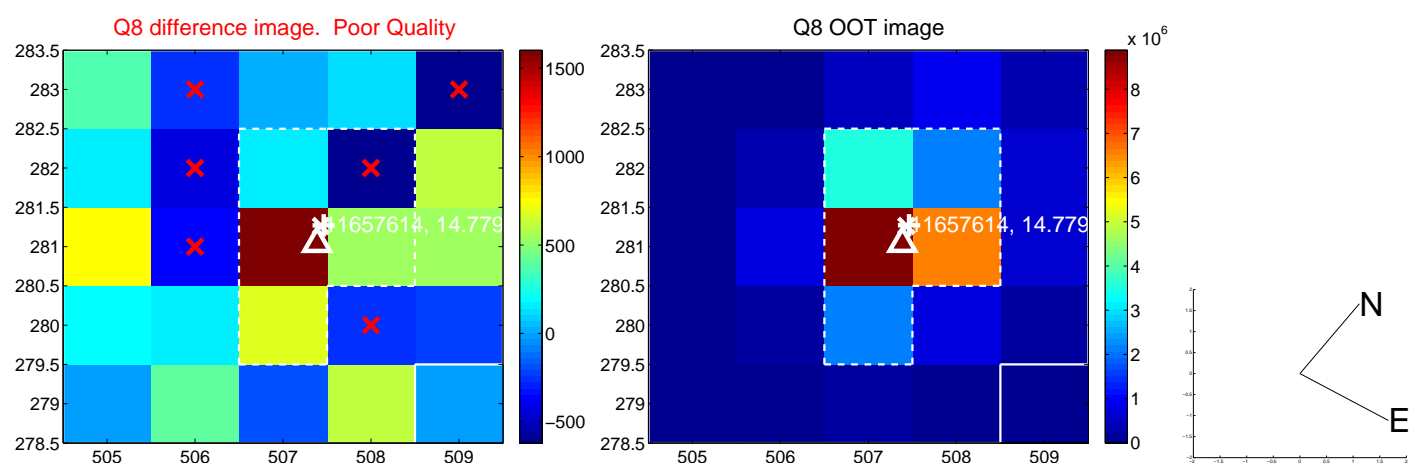
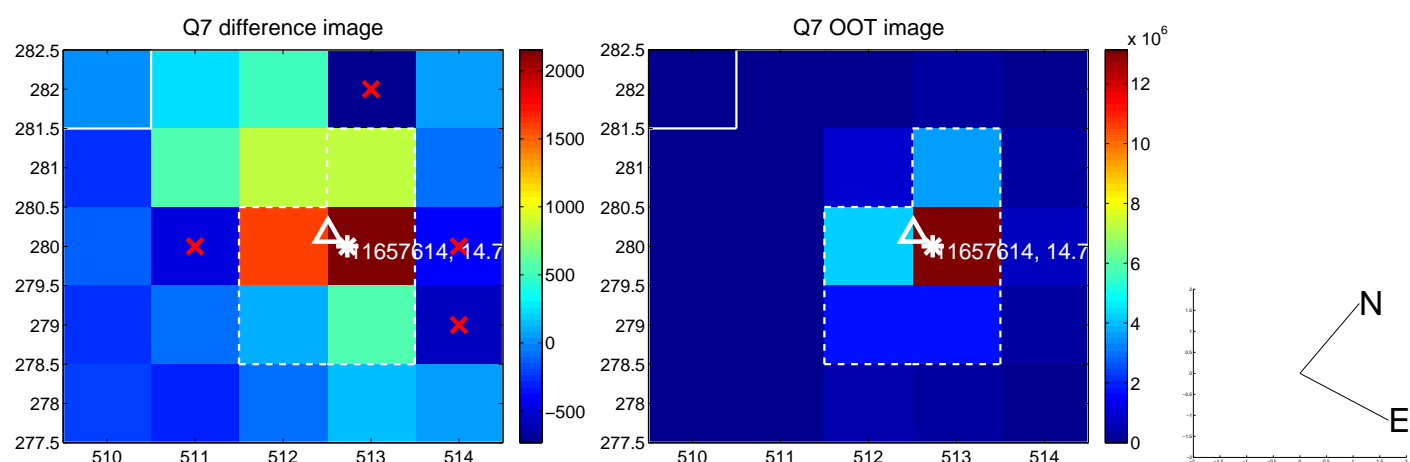
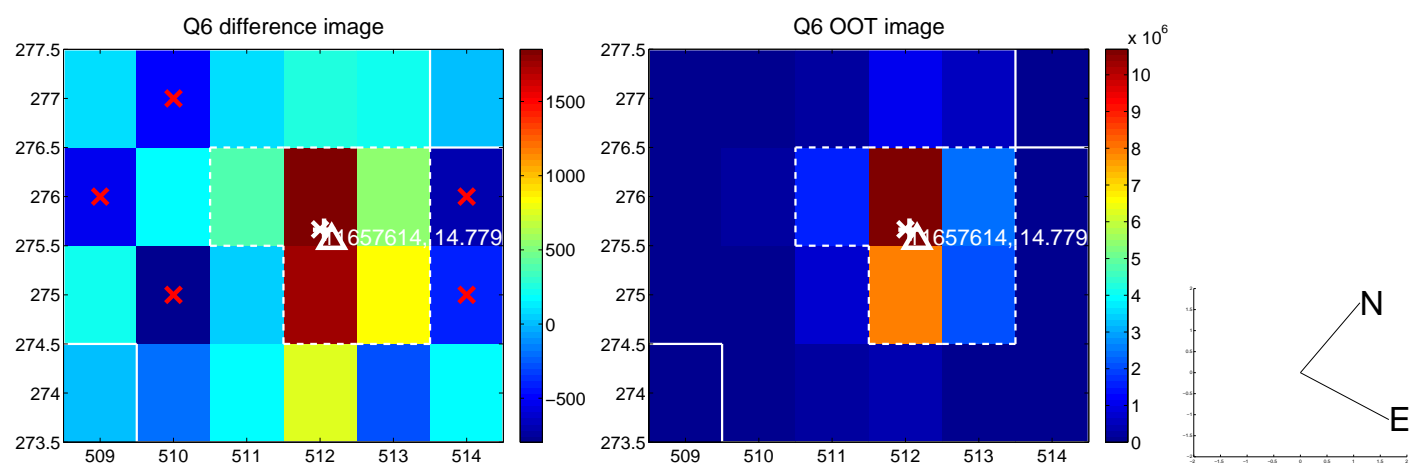
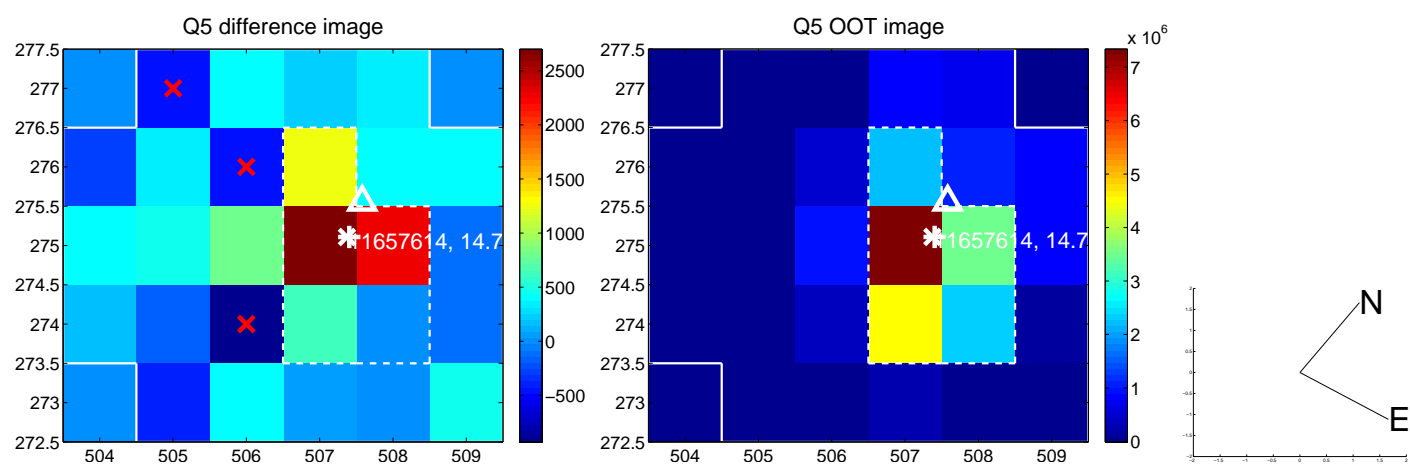


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

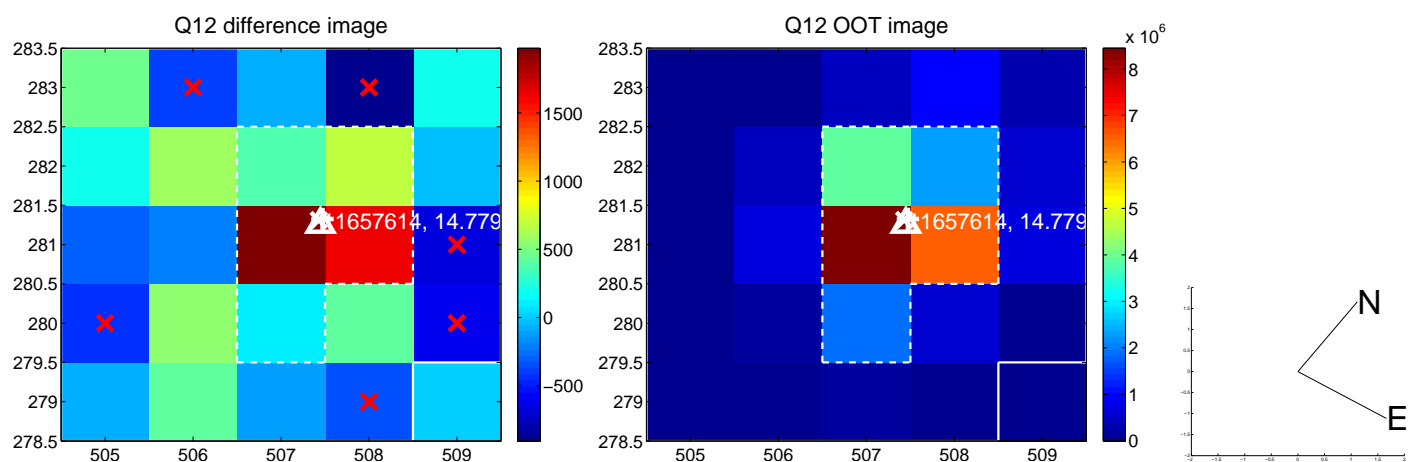
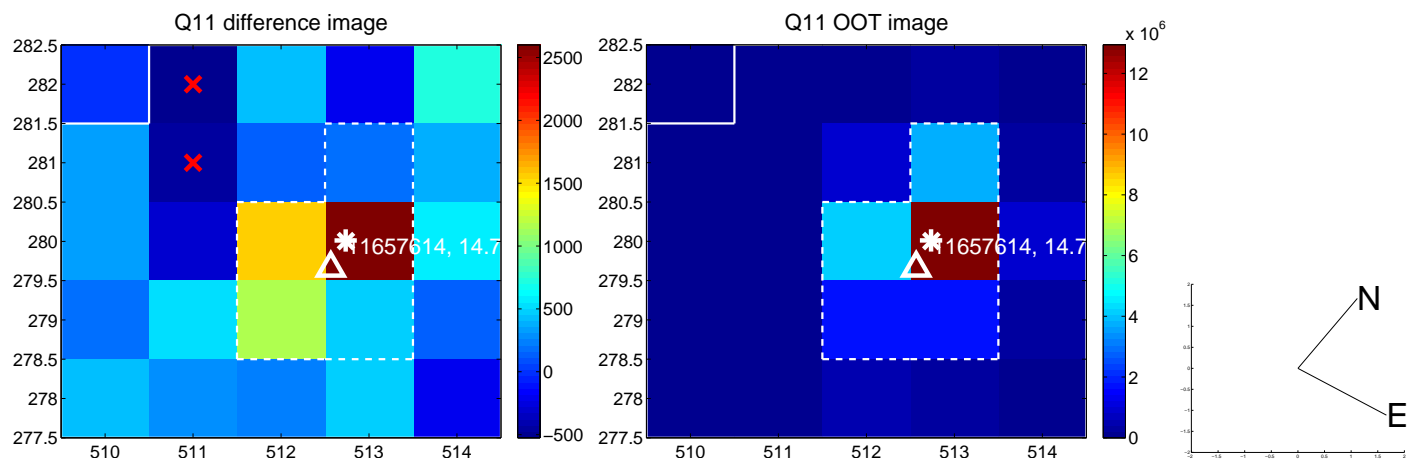
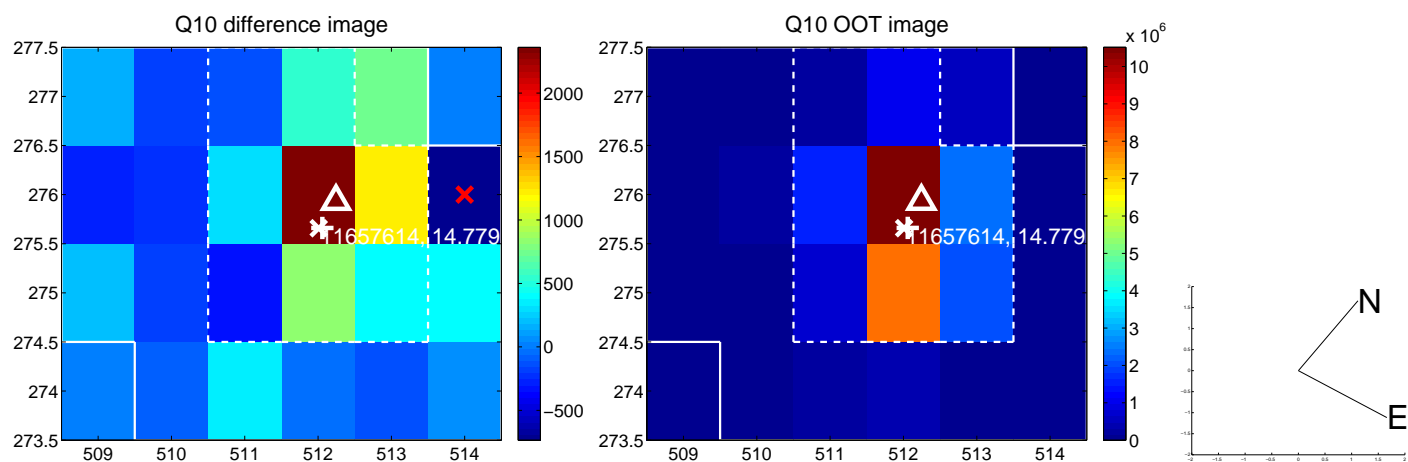
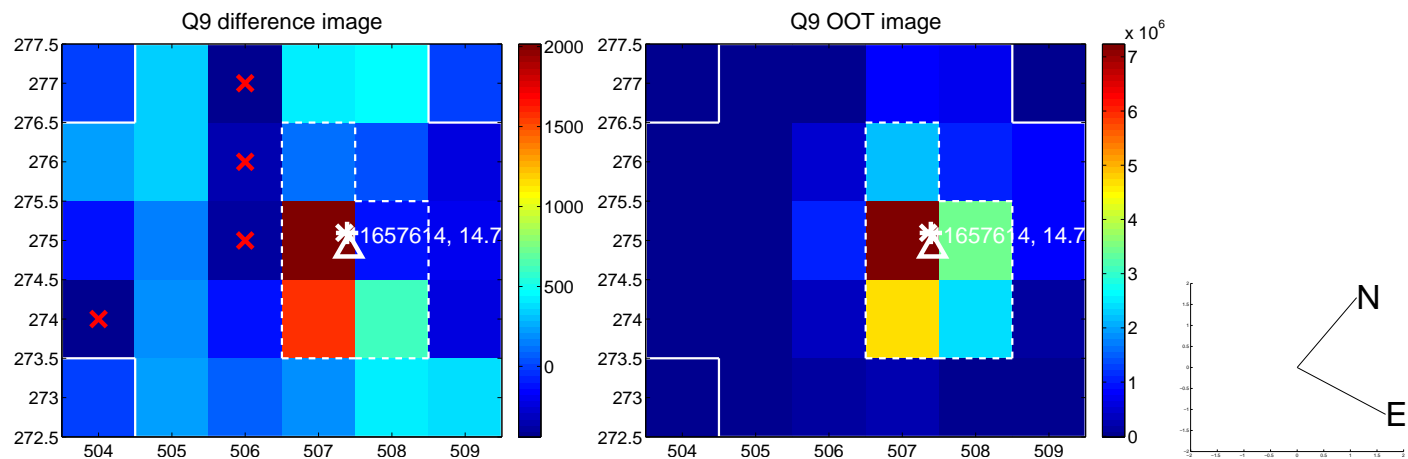
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



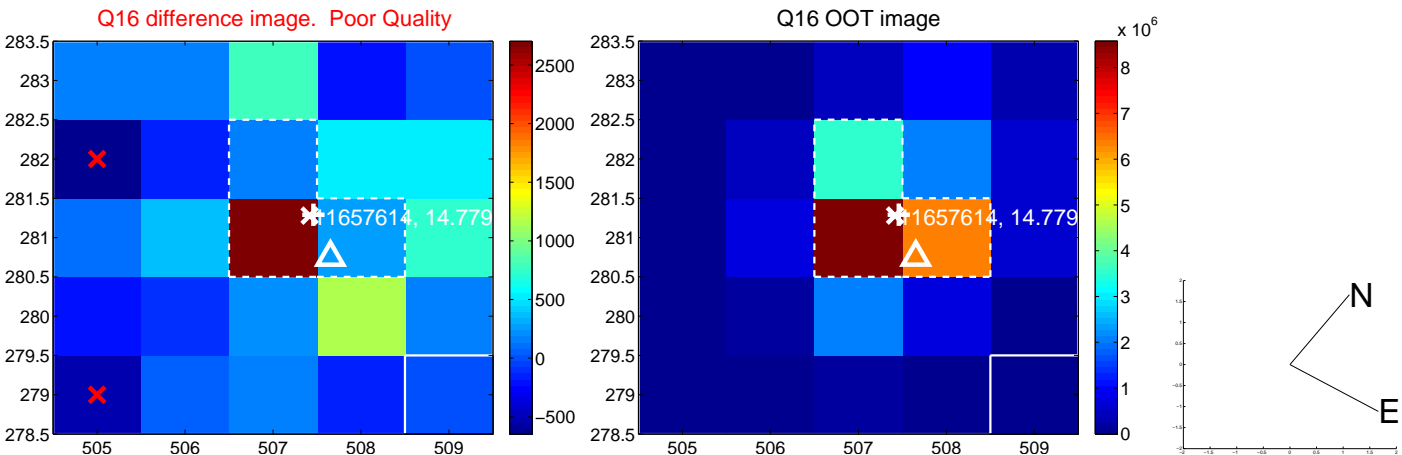
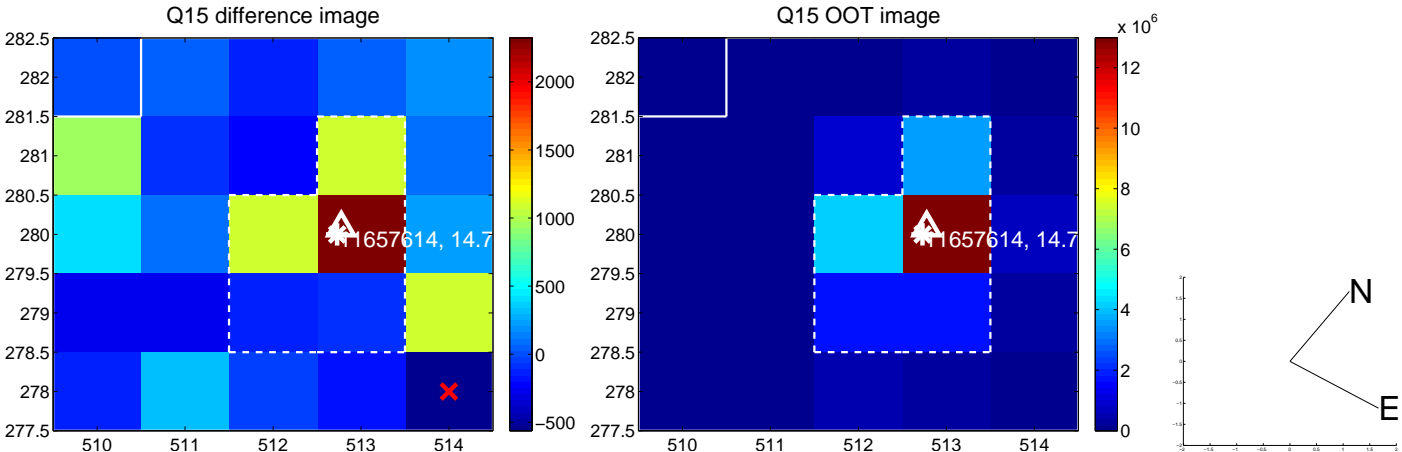
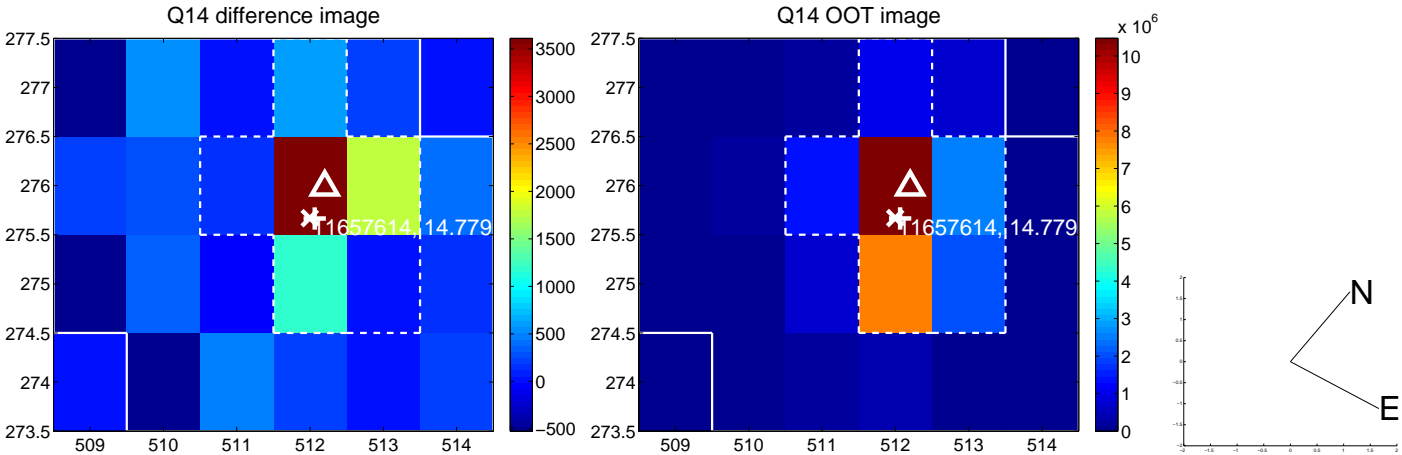
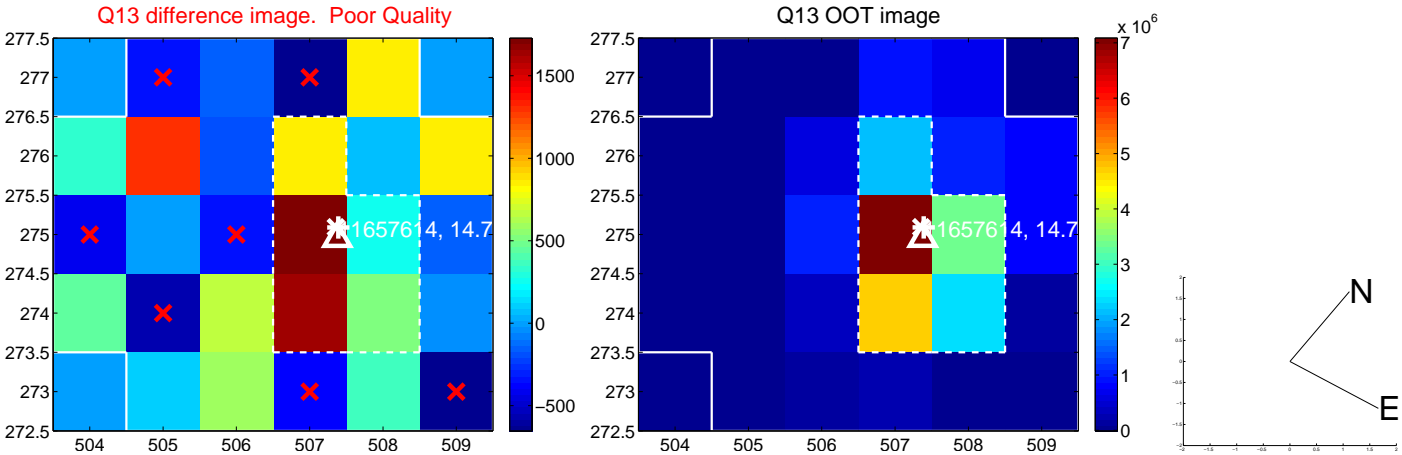
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



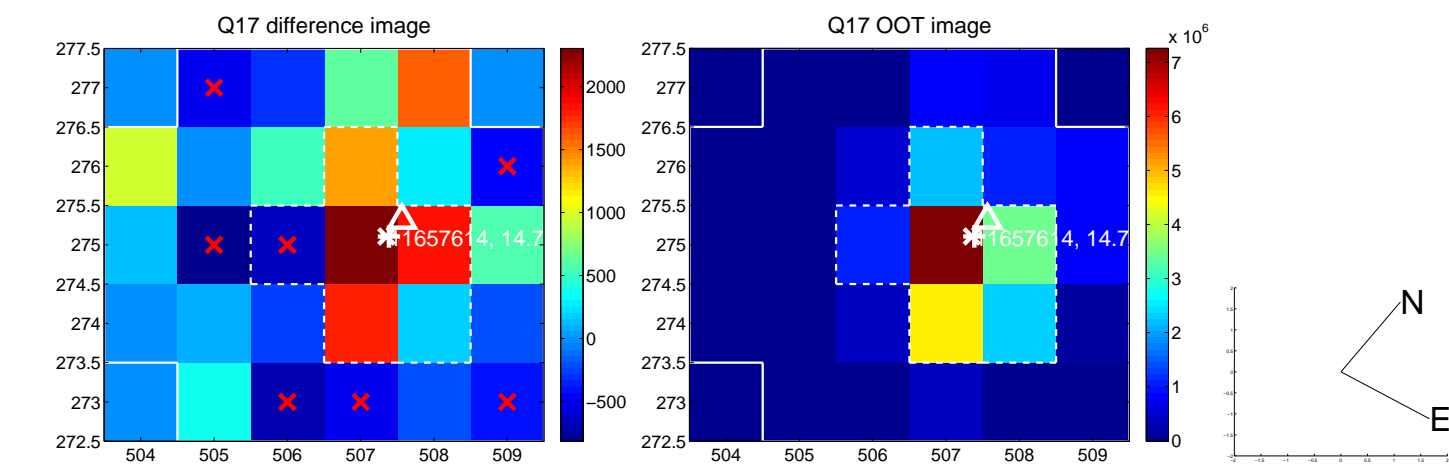
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



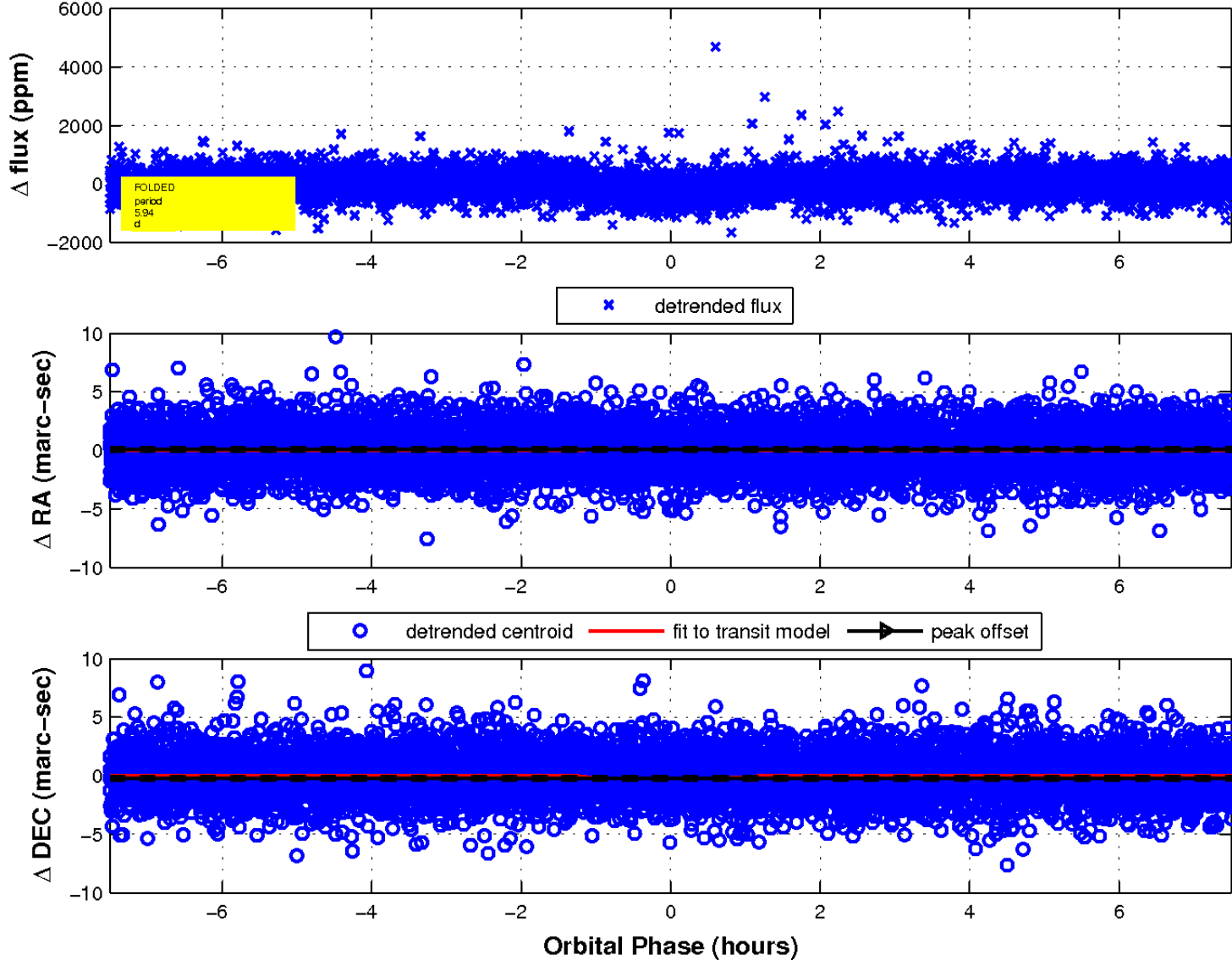
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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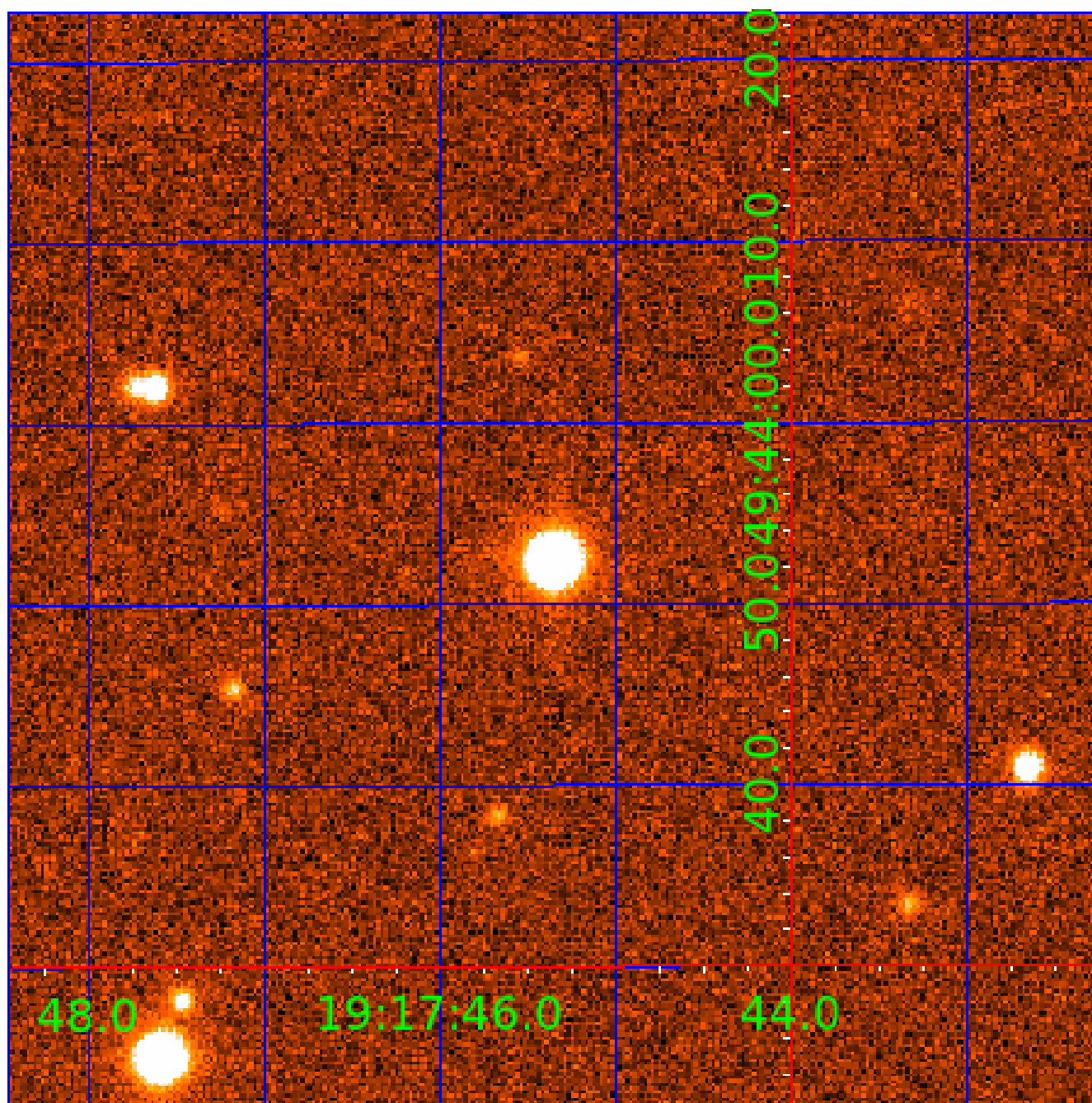


fluxWeightedCentroids, Planet 1 of 2



UKIRT Image

Declination



KIC 011657614

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})
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Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011657614-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT
011657614-02	OBS	PC	0.90	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.

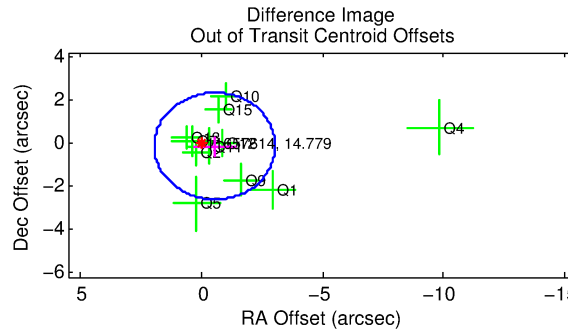
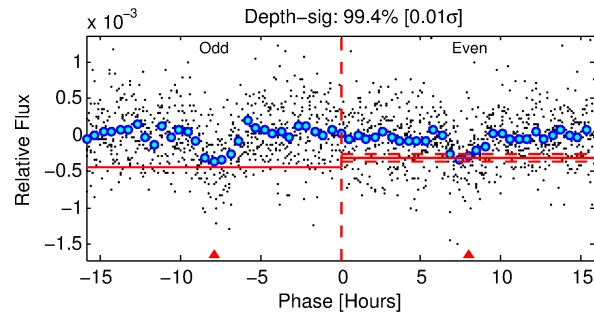
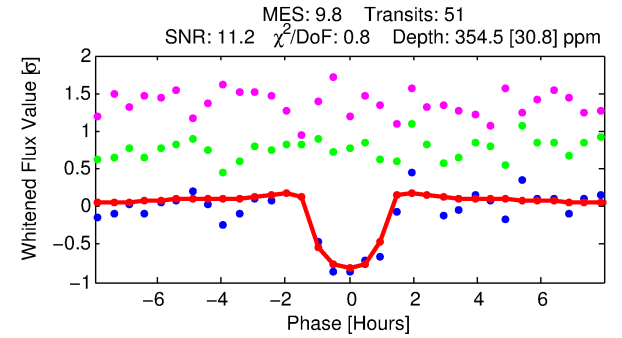
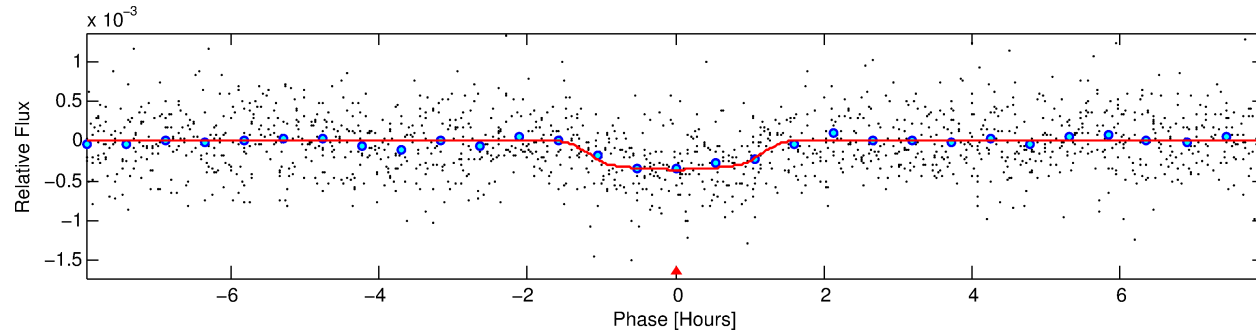
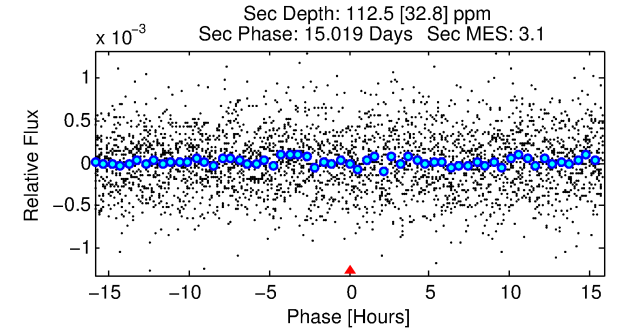
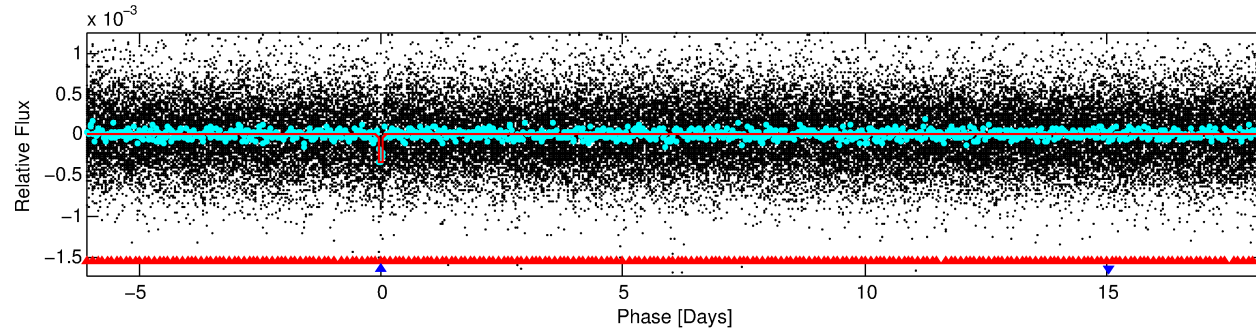
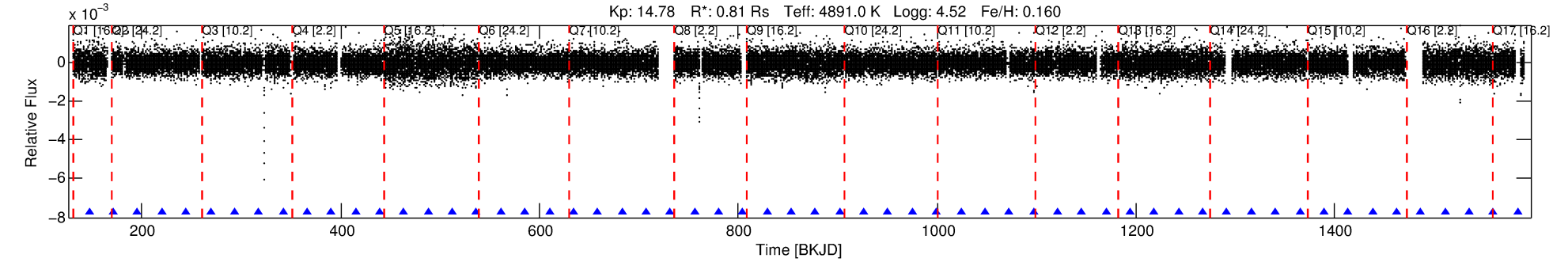
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011657614-02

No Significant Match Found

DV One-Page Summary

KIC: 11657614 Candidate: 2 of 2 Period: 24.353 d
KOI: K03370.01 Corr: 0.920



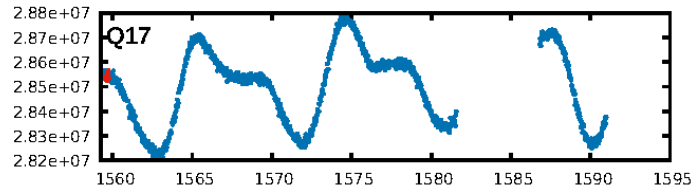
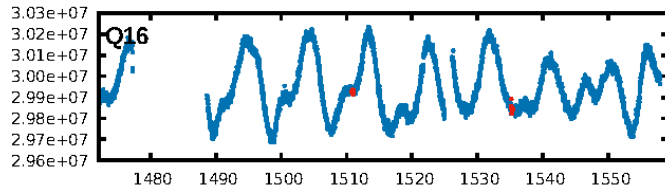
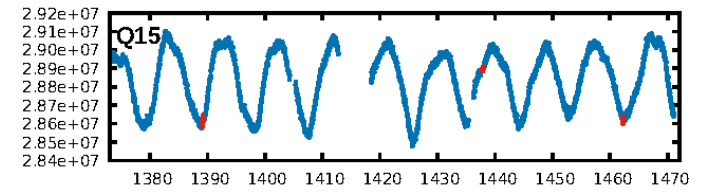
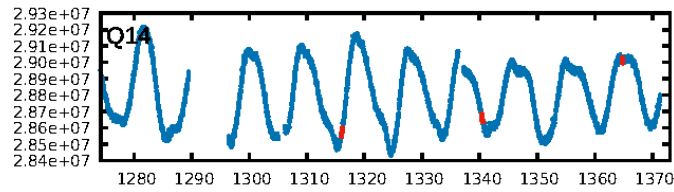
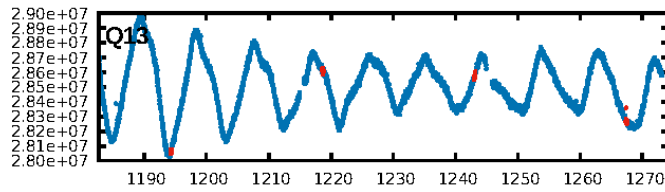
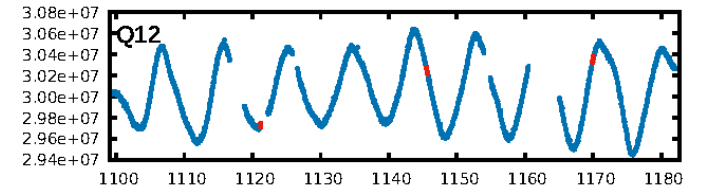
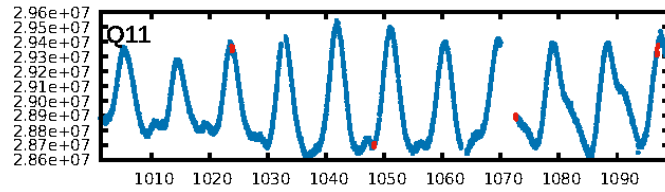
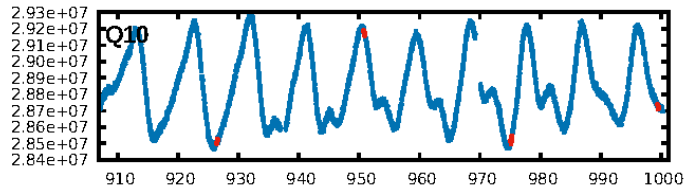
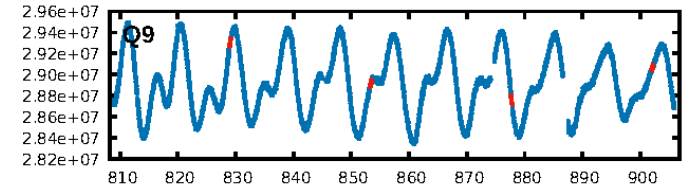
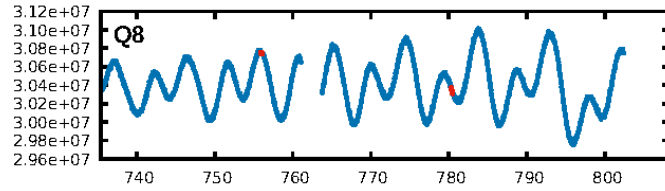
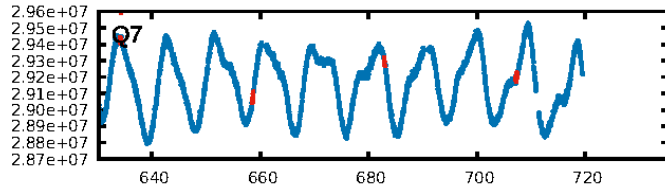
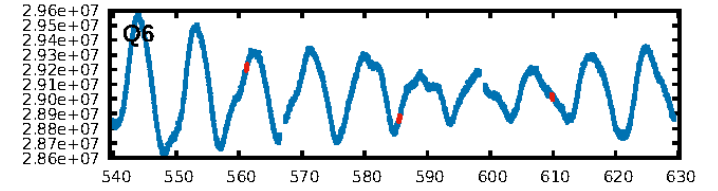
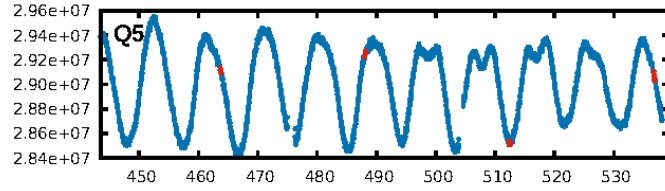
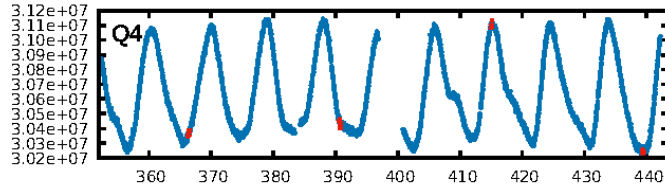
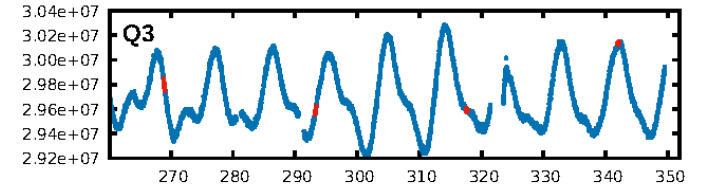
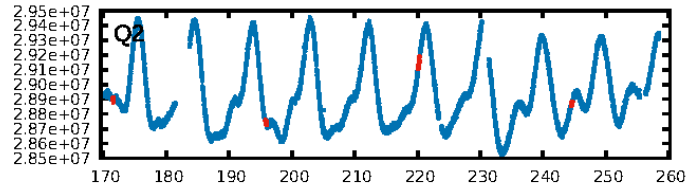
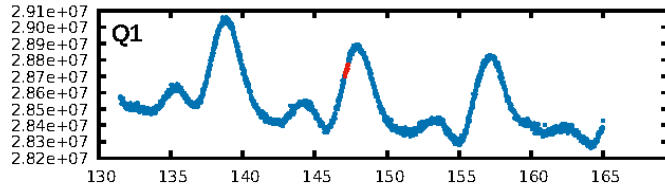
DV Fit Results:

Period = 24.35280 [0.00015] d
Epoch = 147.1819 [0.0047] BKJD
Rp/R* = 0.0204 [0.0145]
a/R* = 38.06 [98.97]
b = 0.86 [0.78]
Seff = 14.55 [1.90]
Teq = 498 [16] K
Rp = 1.79 [1.28] Re
a = 0.1511 [0.0105] AU
Ag = 441.28 [641.92] [0.69σ]
Teffp = 3529 [1281] K [2.37σ]

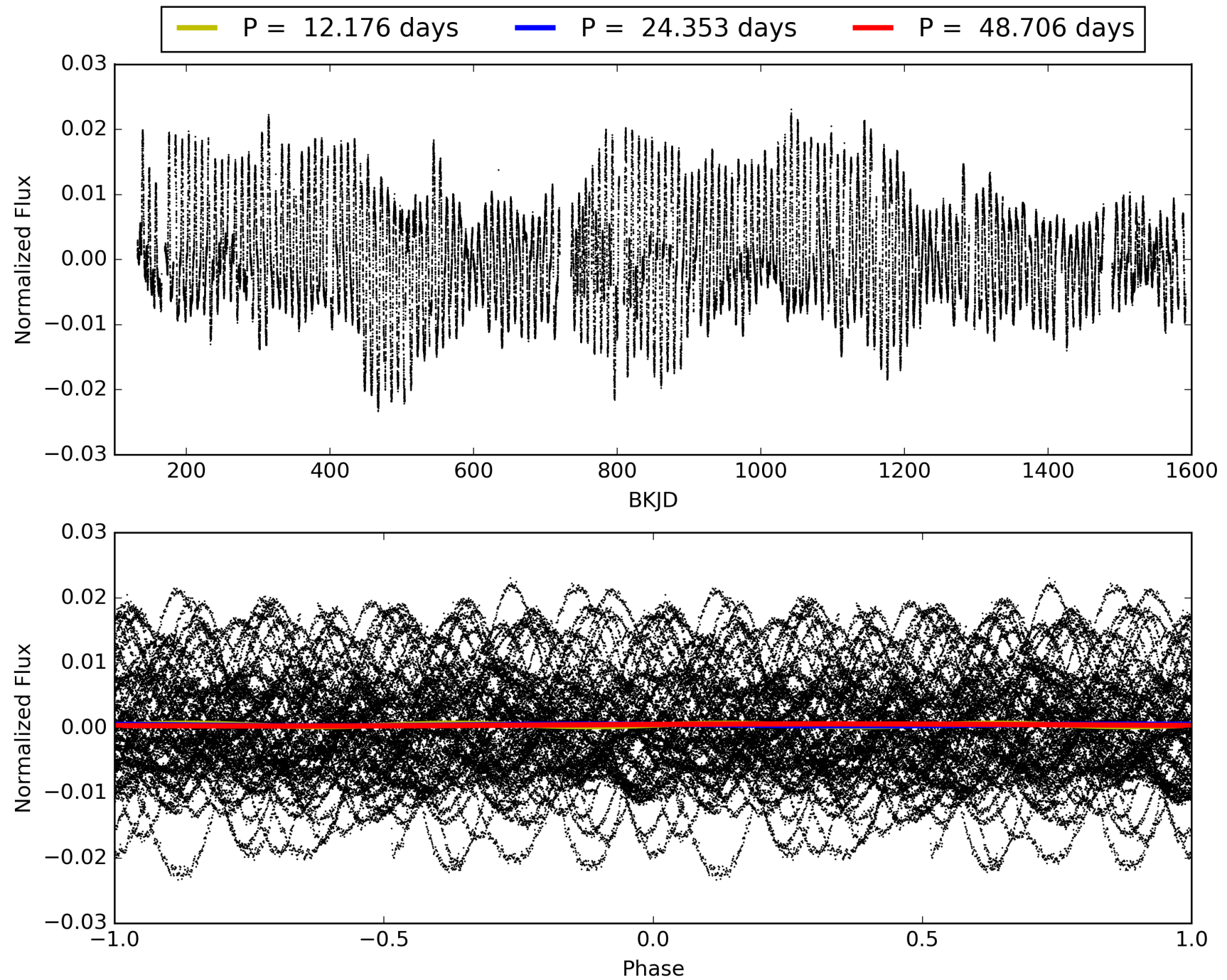
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [121.26σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 80.1%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 2.61e-22
RollingBand-fgt: 1.00 [49/49]
GhostDiagnostic-chr: -2.531
Centroid-sig: 0.0%
Centroid-so: 2.701 arcsec [2.61σ]
OotOffset-rm: 0.569 arcsec [0.68σ]
KicOffset-rm: 0.458 arcsec [0.52σ]
OotOffset-st: 2/3/2/4 [11]
KicOffset-st: 2/3/2/4 [11]
DiffImageQuality-fgm: 0.64 [7/11]
DiffImageOverlap-fno: 1.00 [16/16]

TCE 011657614-02, PDC Light Curves

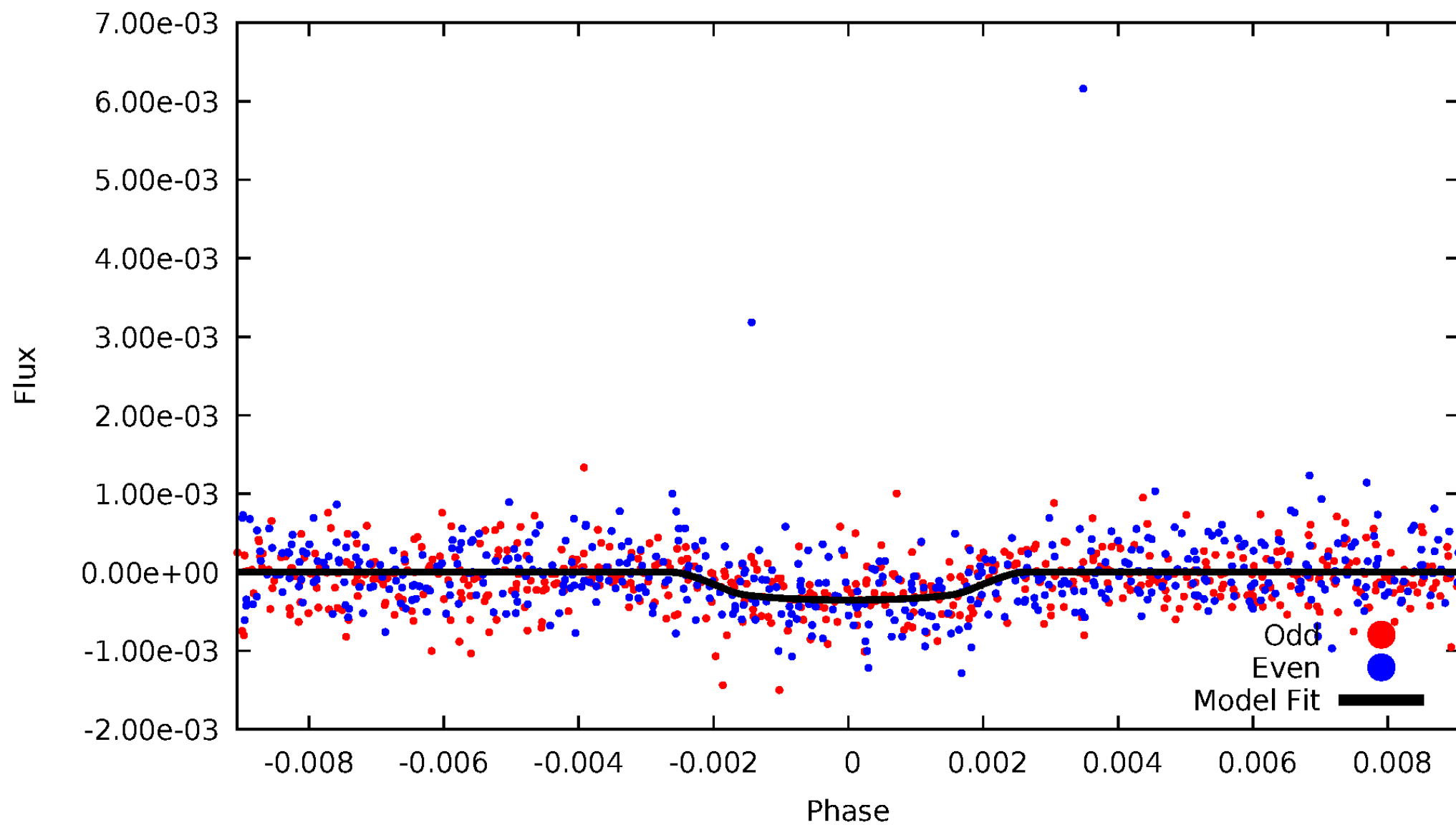


TCE 011657614-02



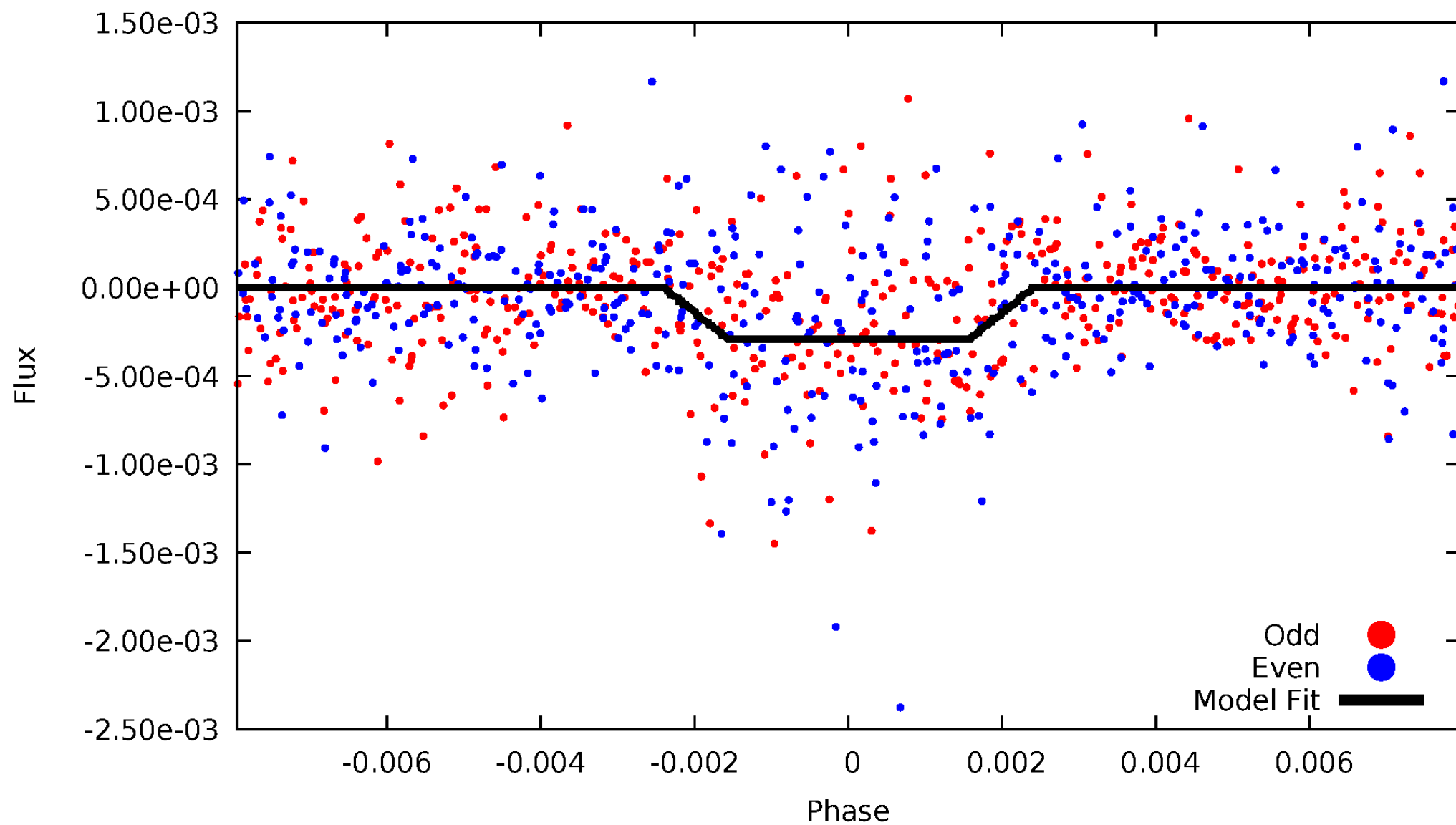
DV Odd/Even

TCE 011657614-02



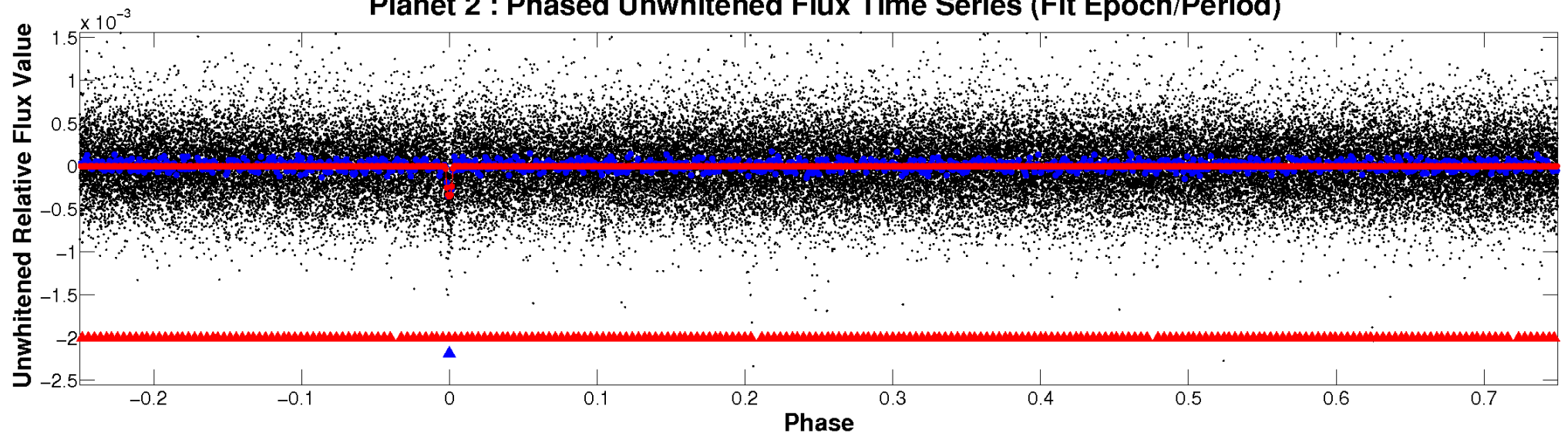
ALT Odd/Even

TCE 011657614-02

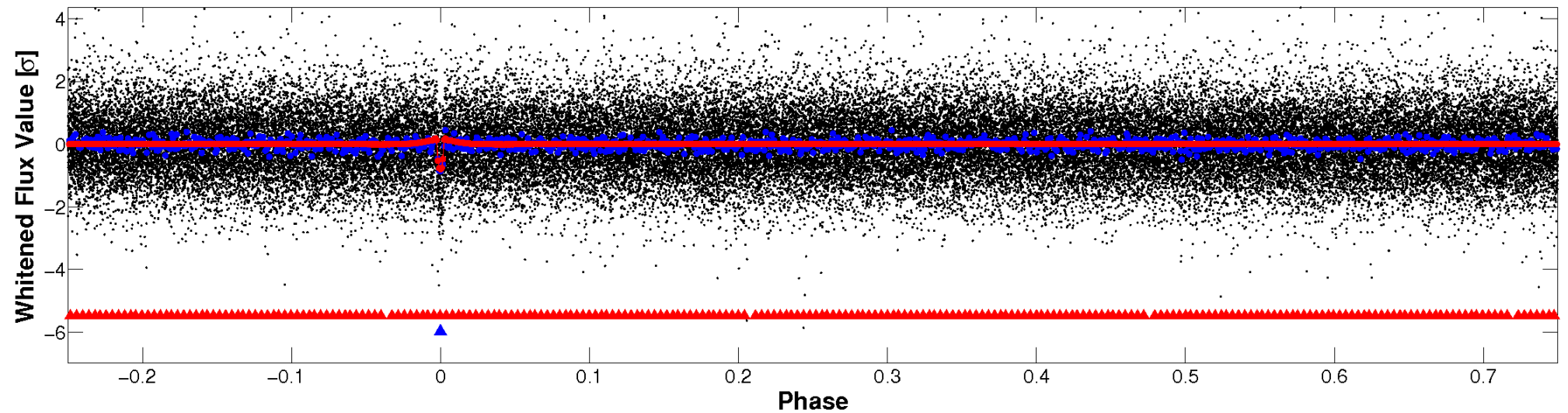


Non-Whitened Vs. Whitened Light Curve

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

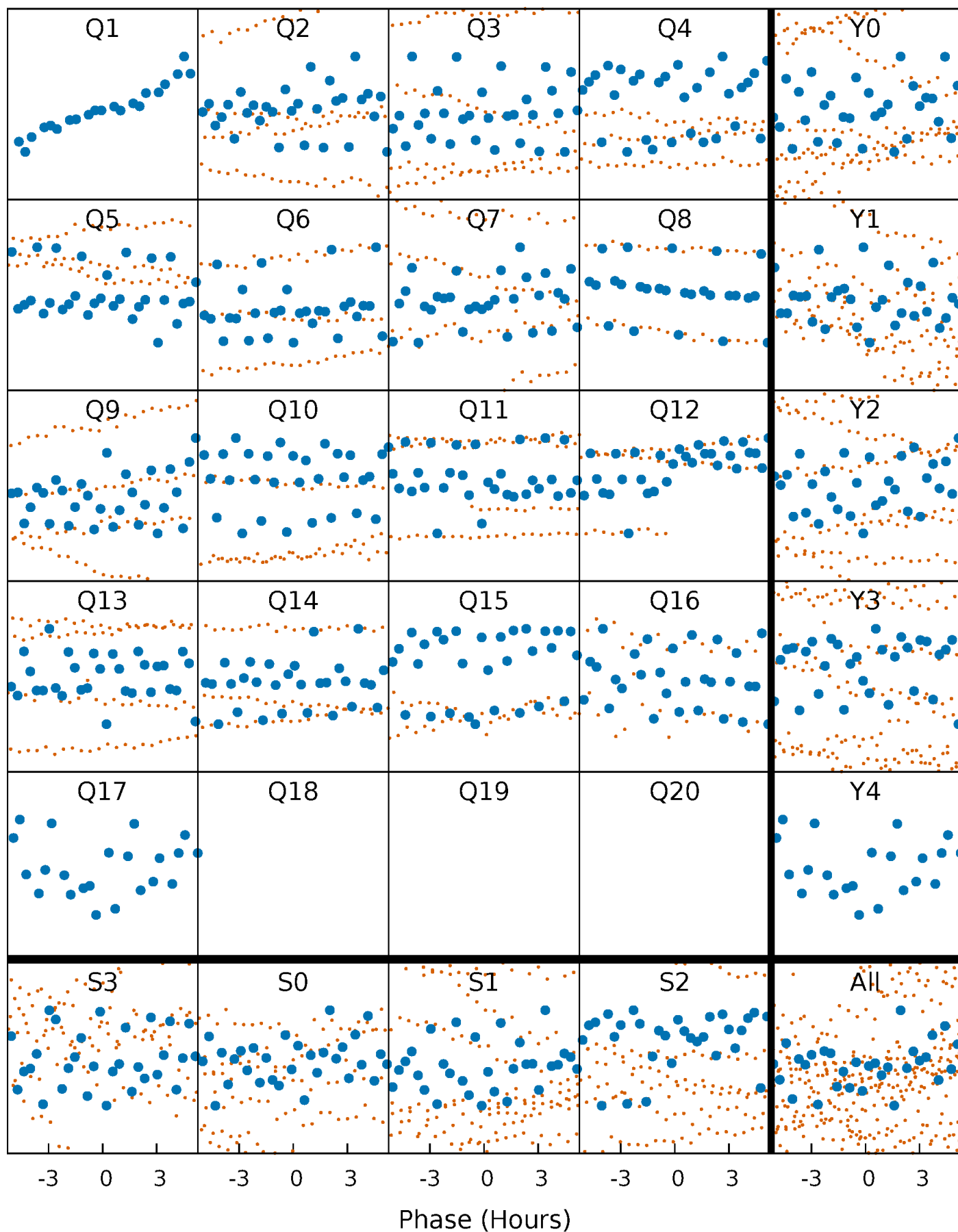


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



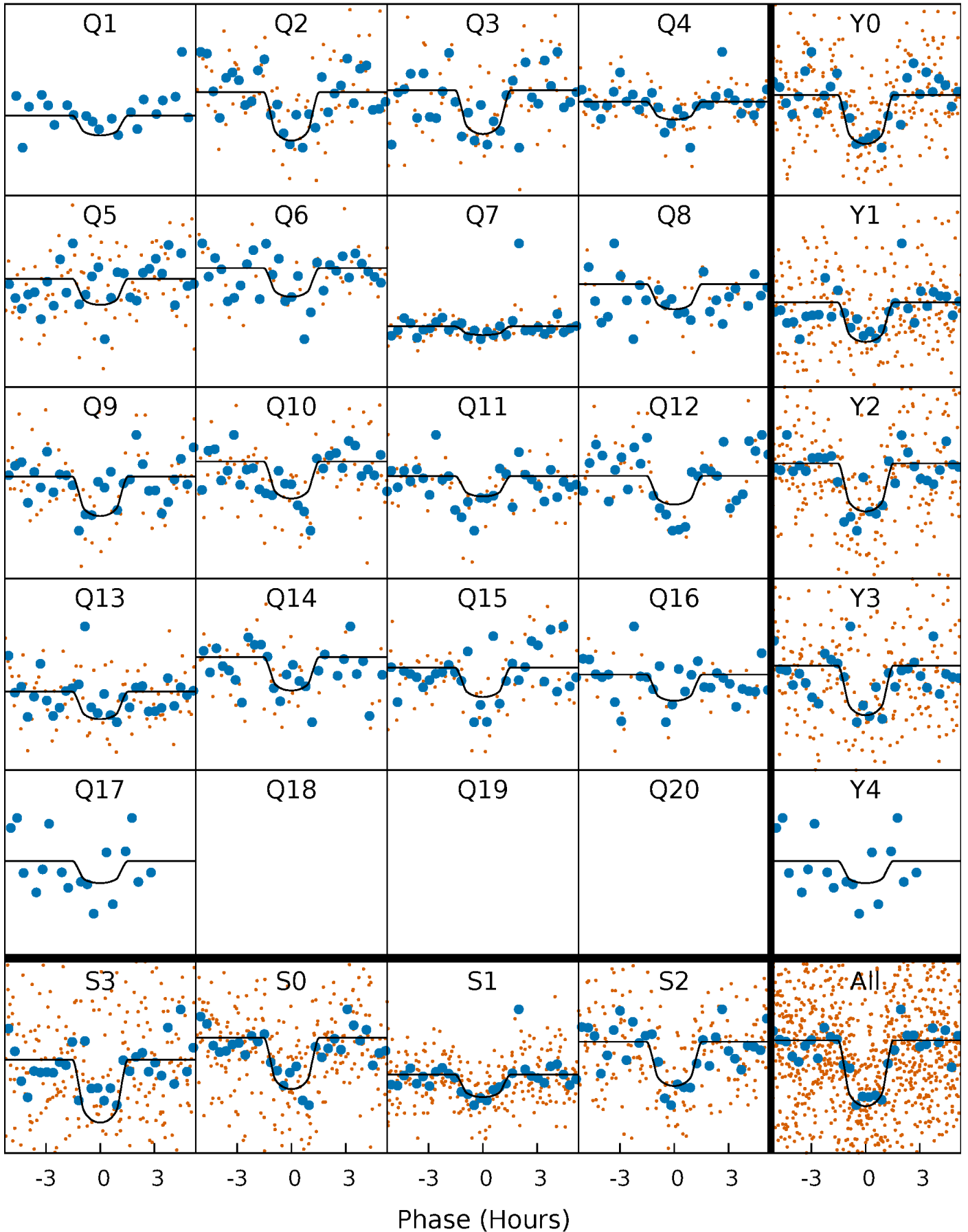
PDC Quarter-Phased Transit Curves

TCE 011657614-02 P= 24.352797 Days $T_0=147.181943$ (BKJD)



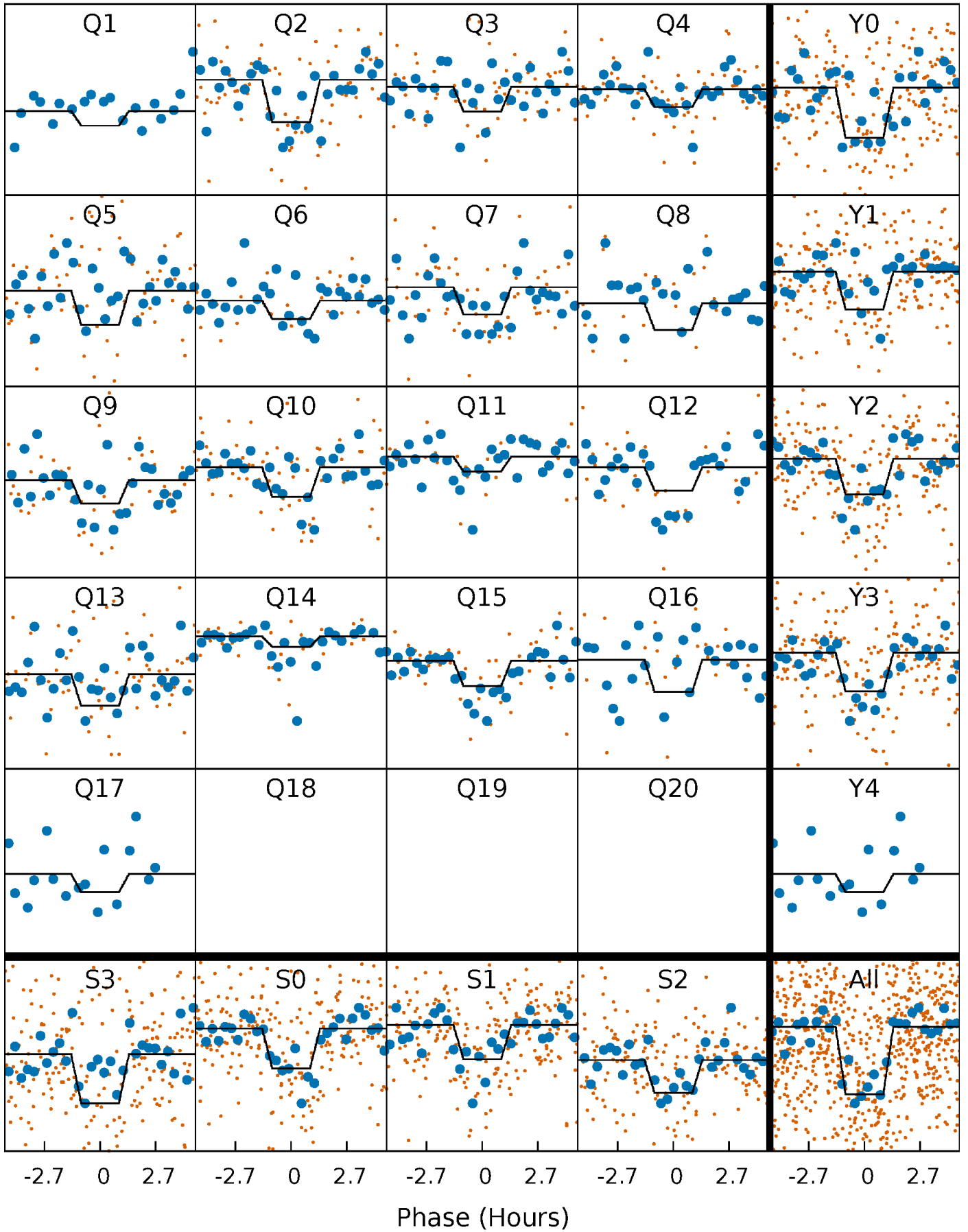
DV Quarter-Phased Transit Curves

TCE 011657614-02 P= 24.352797 Days $T_0=147.181943$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

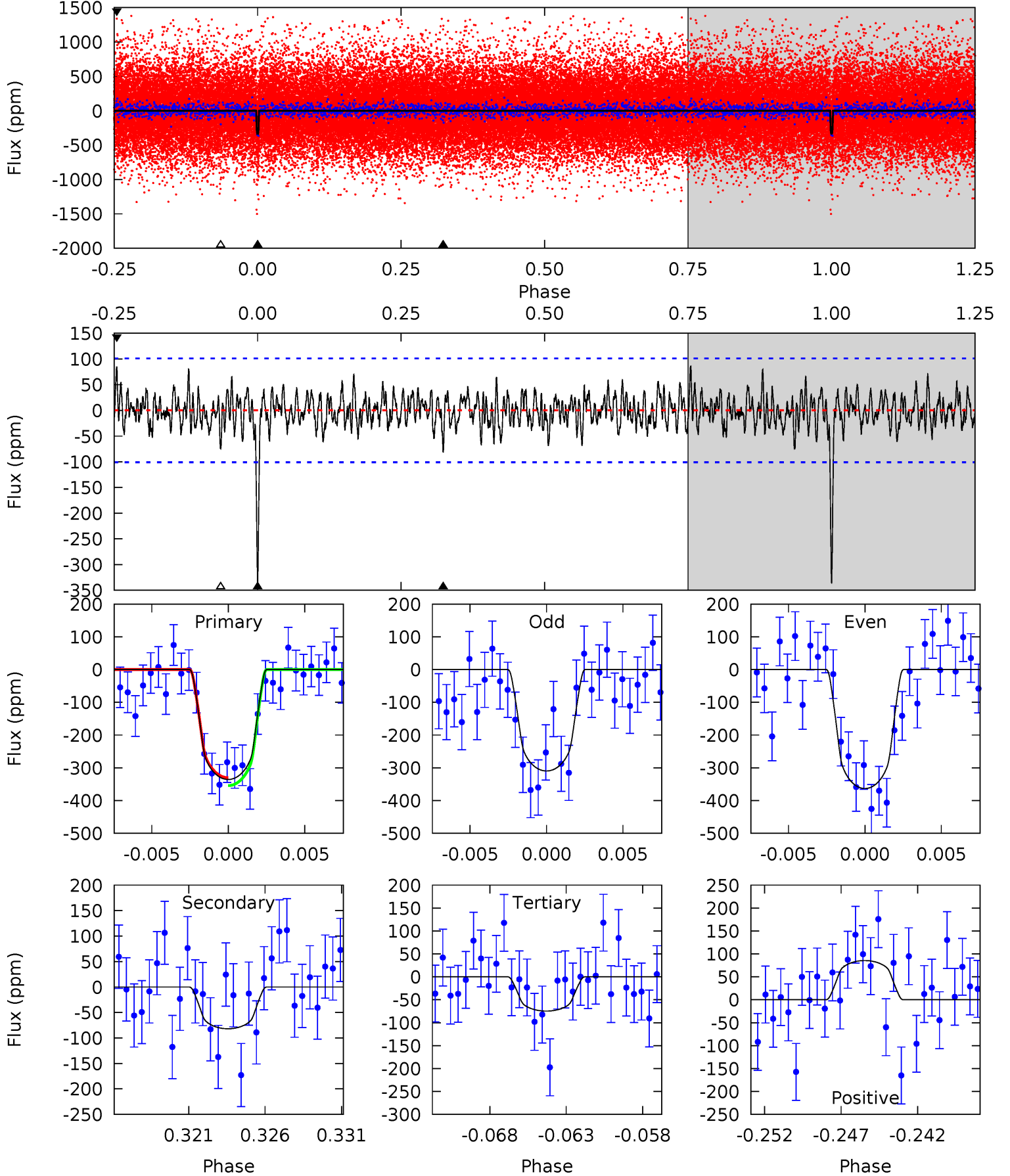
TCE 011657614-02 P= 24.352793 Days $T_0=147.180589$ (BKJD)



DV Model-Shift Uniqueness Test

011657614-02, P = 24.352797 Days, E = 122.829146 Days

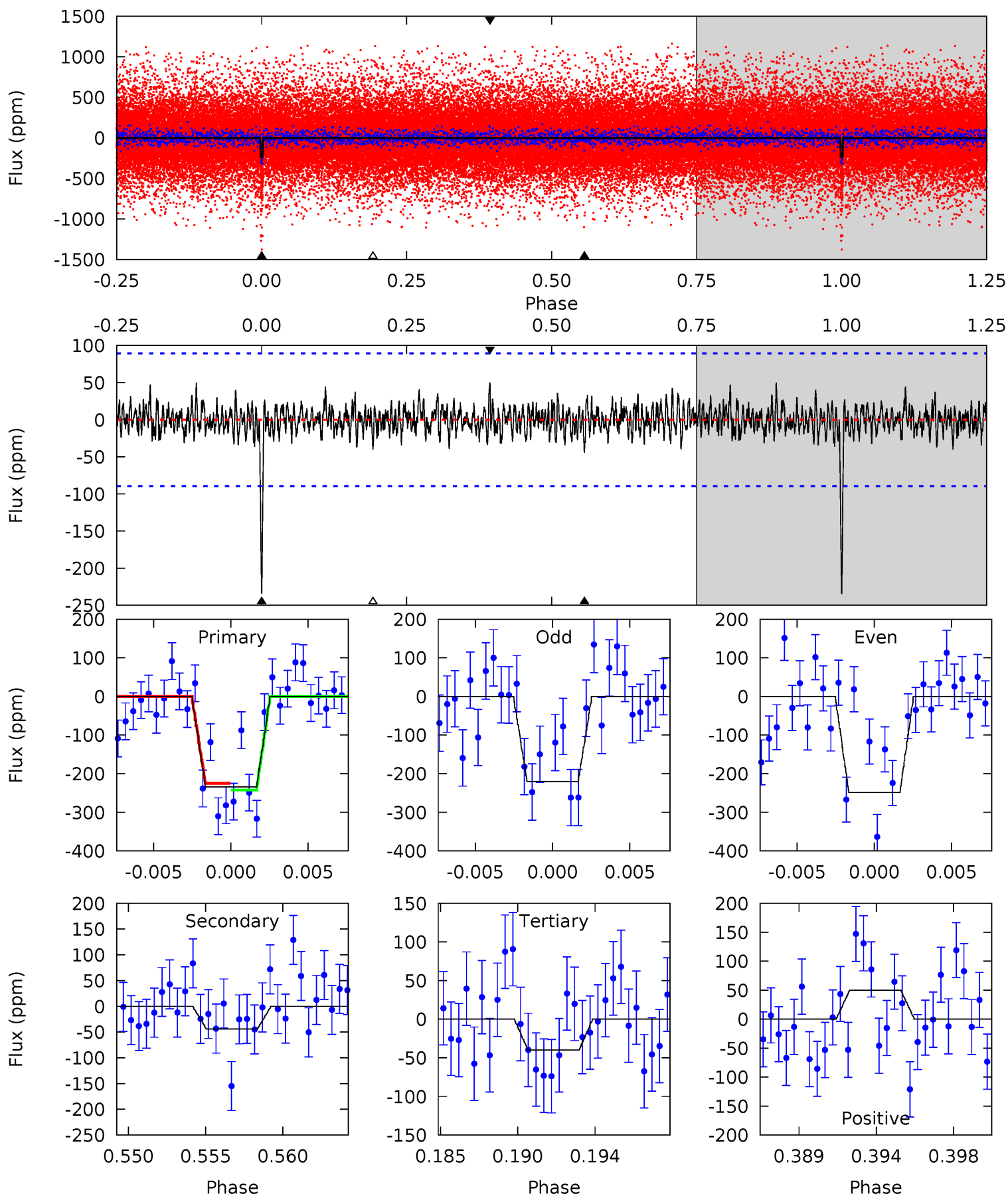
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.1	4.18	3.81	4.36	5.15	2.79	1.31	13.3	12.8	0.37	-0.18	1.37	0.94	0.20	0.62



Alt Model-Shift Uniqueness Test

011657614-02, $P = 24.352793$ Days, $E = 122.827796$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.5	2.54	2.31	2.90	5.17	2.82	0.84	11.2	10.6	0.23	-0.36	0.82	0.88	0.18	0.51



Stellar Parameters For KIC 011657614

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4891^{+78}_{-78}	$4.516^{+0.068}_{-0.020}$	$0.160^{+0.150}_{-0.150}$	$0.805^{+0.028}_{-0.056}$	$0.776^{+0.052}_{-0.028}$	$2.095^{+0.491}_{-0.181}$
	+2%/-2%	+2%/-0%	+94%/-94%	+3%/-7%	+7%/-4%	+23%/-9%
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 011657614-02 / KOI 3370.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-82 ± 20	$1.85^{+1.16}_{-1.01}$	690^{+15}_{-15}	3569^{+1211}_{-533}	301^{+1231}_{-198}
Alt.	-44 ± 17	$1.69^{+1.25}_{-1.00}$	691^{+15}_{-17}	3317^{+1163}_{-524}	185^{+923}_{-129}

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

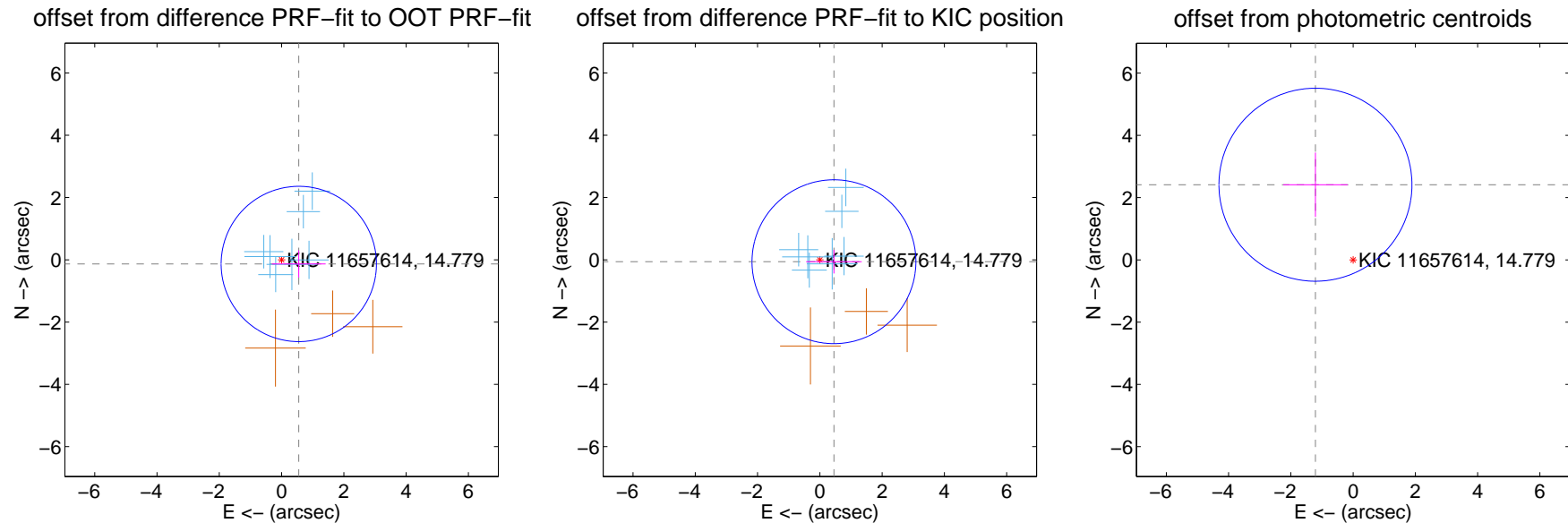
DV Centroid Data

Supplemental centroid analysis for 011657614-02. Kepler magnitude: 14.78. Transit SNR 11.23

There are 7 quarters with good PRF difference image offsets

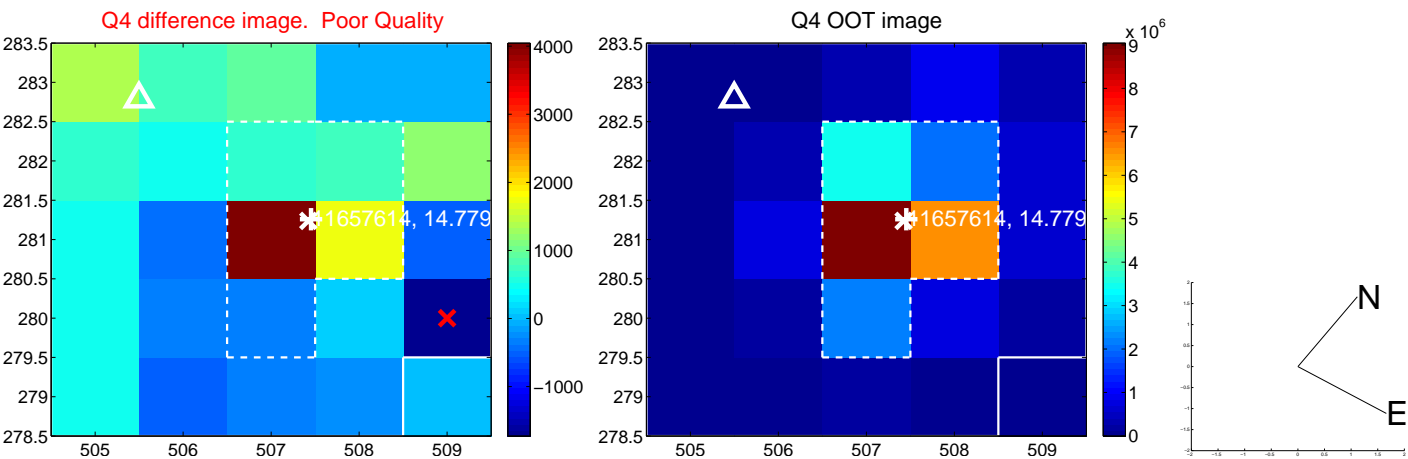
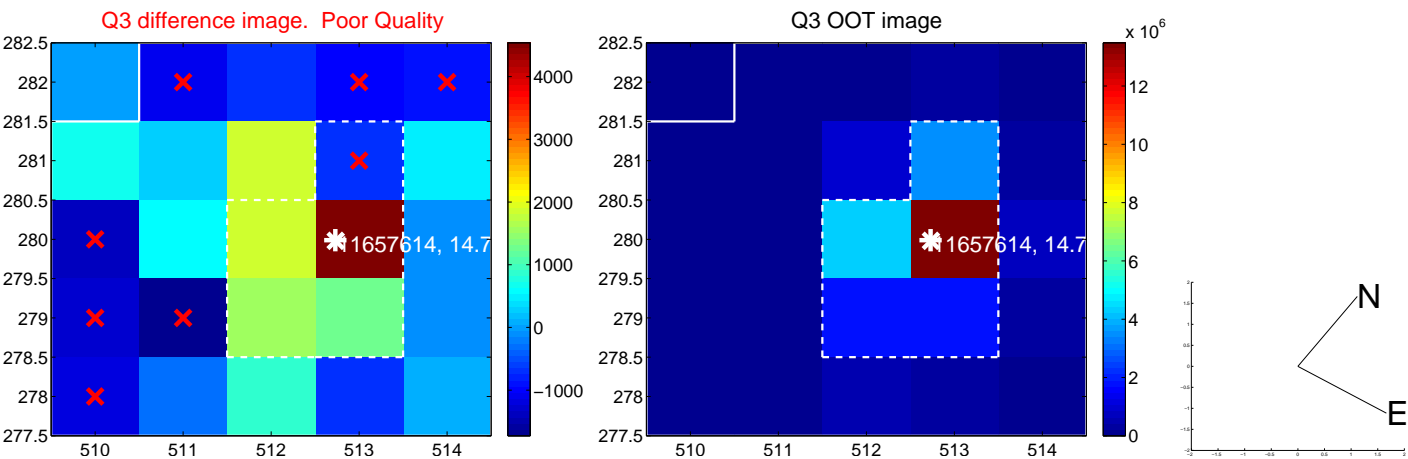
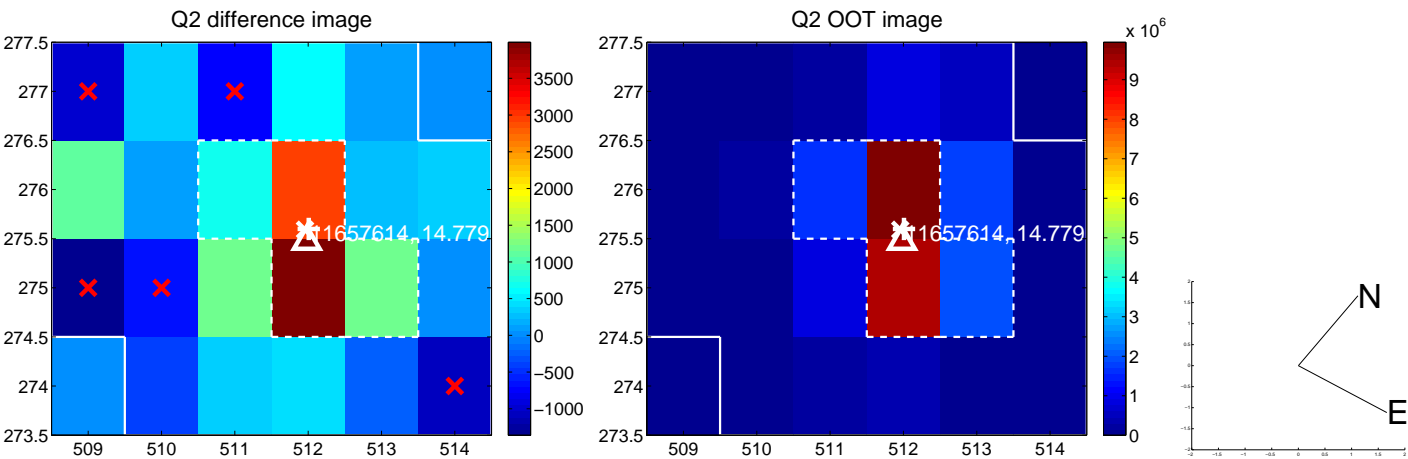
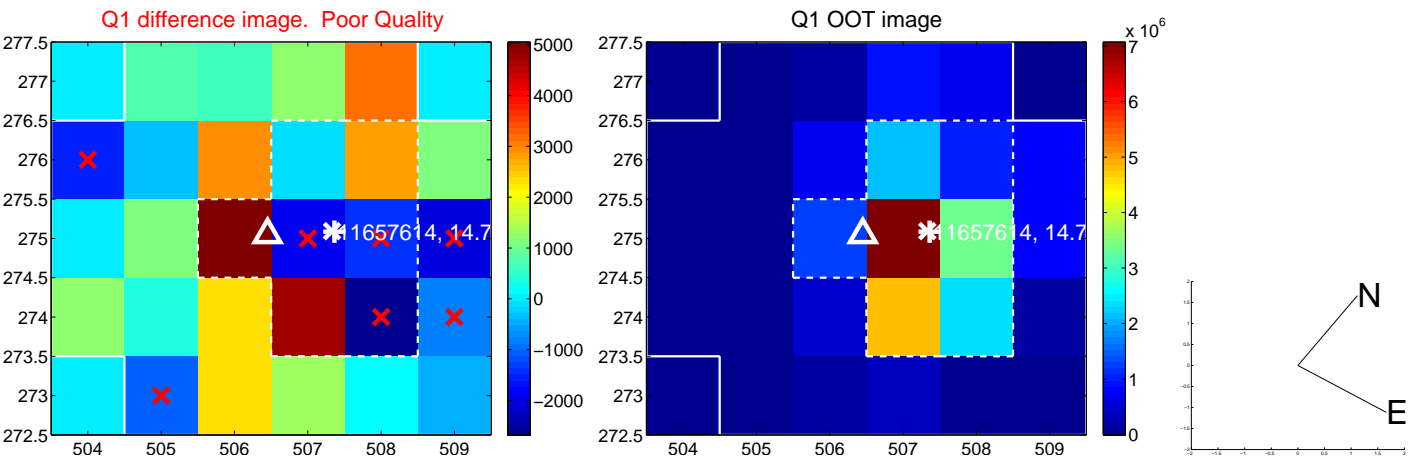
The direct PRF centroid is offset from the target star catalog position by about 0.01 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.569 ± 0.831	0.68	-0.553 ± 0.861	-0.134 ± 0.435
PRF-fit source offset from KIC position	0.458 ± 0.877	0.52	-0.453 ± 0.893	-0.062 ± 0.380
photometric centroid source offset	2.70 ± 1.03	2.61	1.21 ± 1.04	2.41 ± 1.03

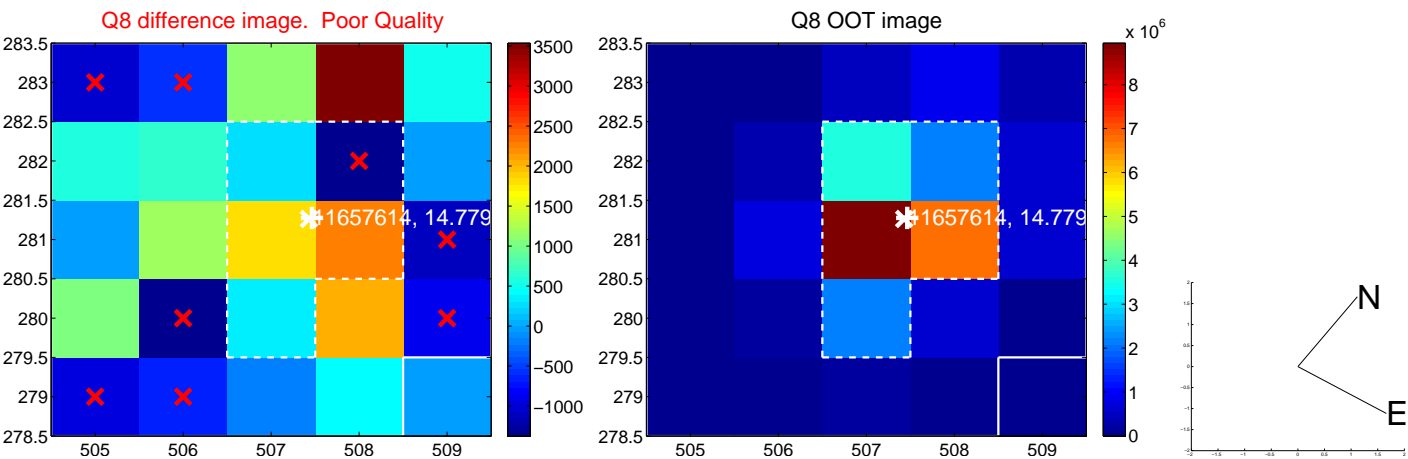
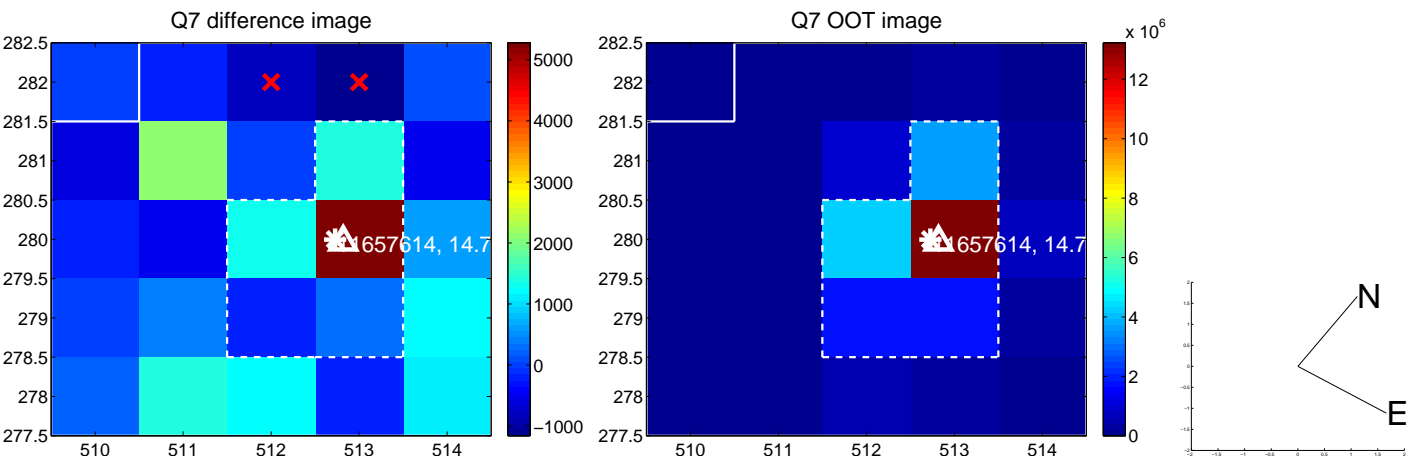
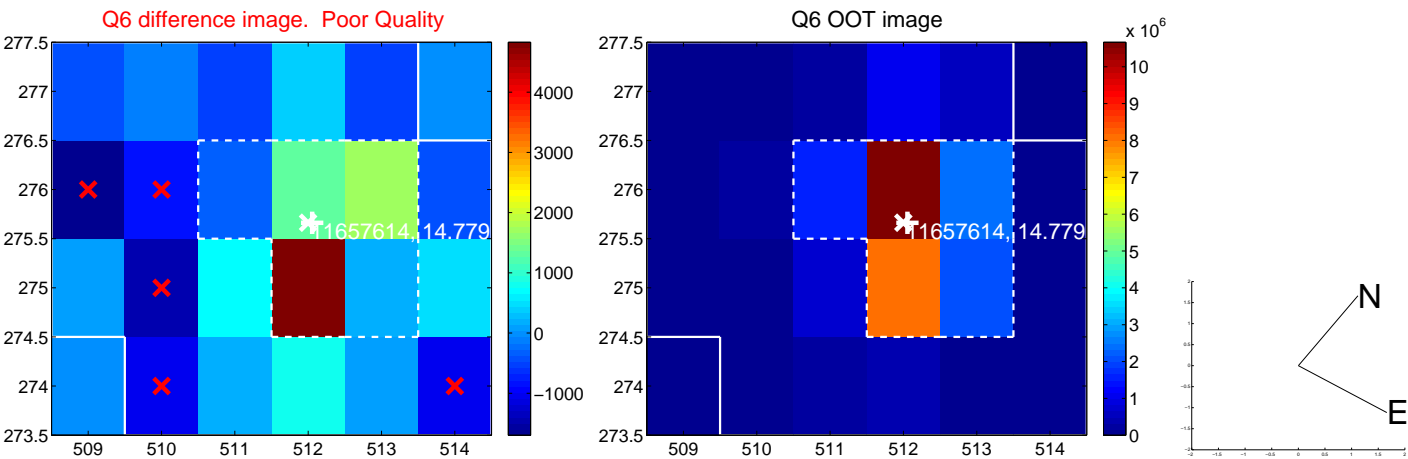
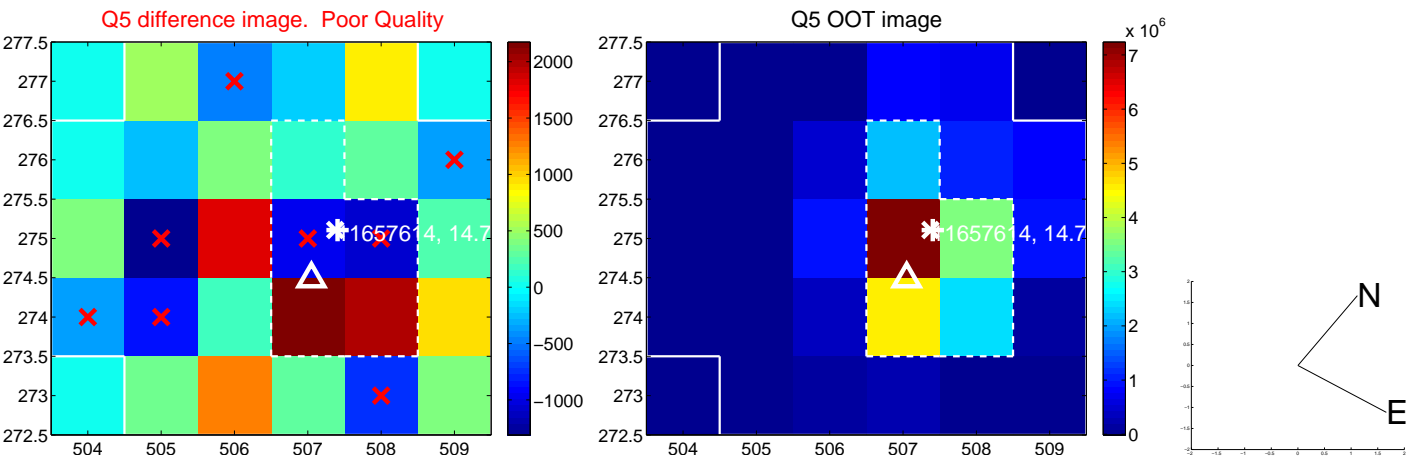


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

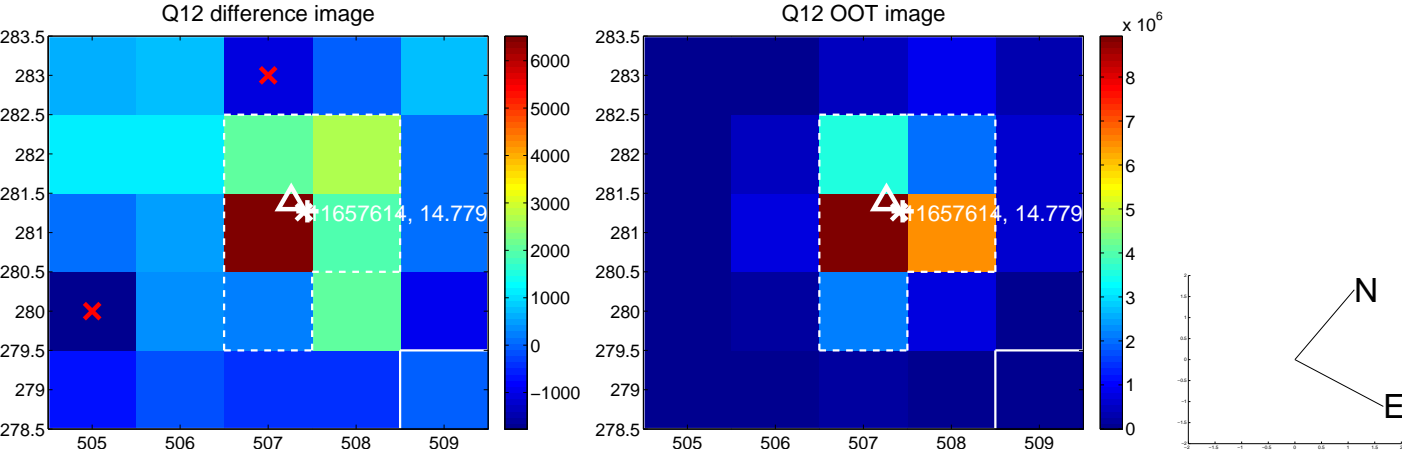
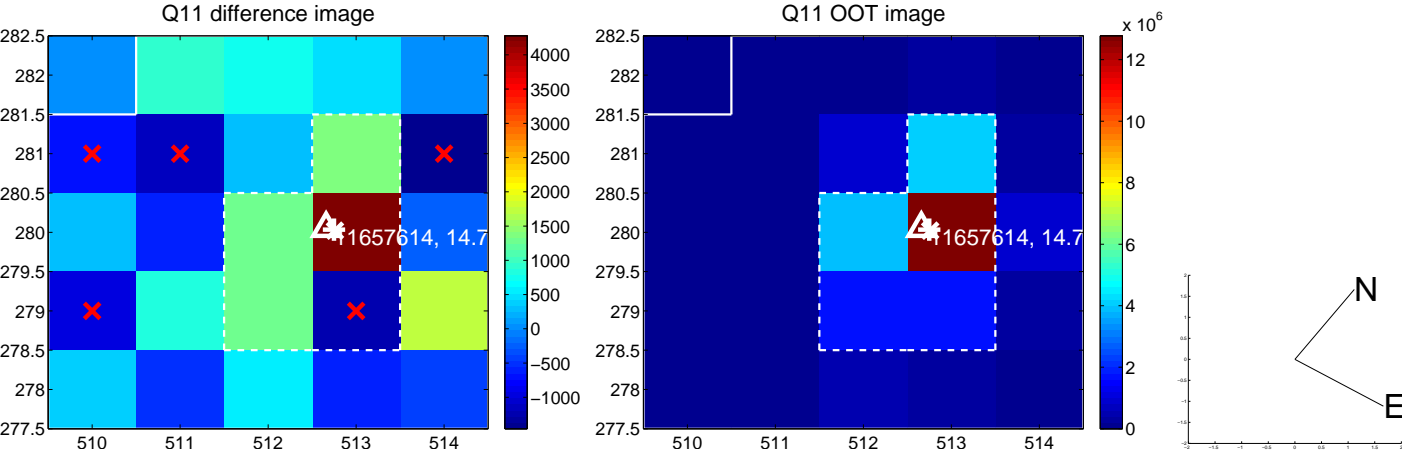
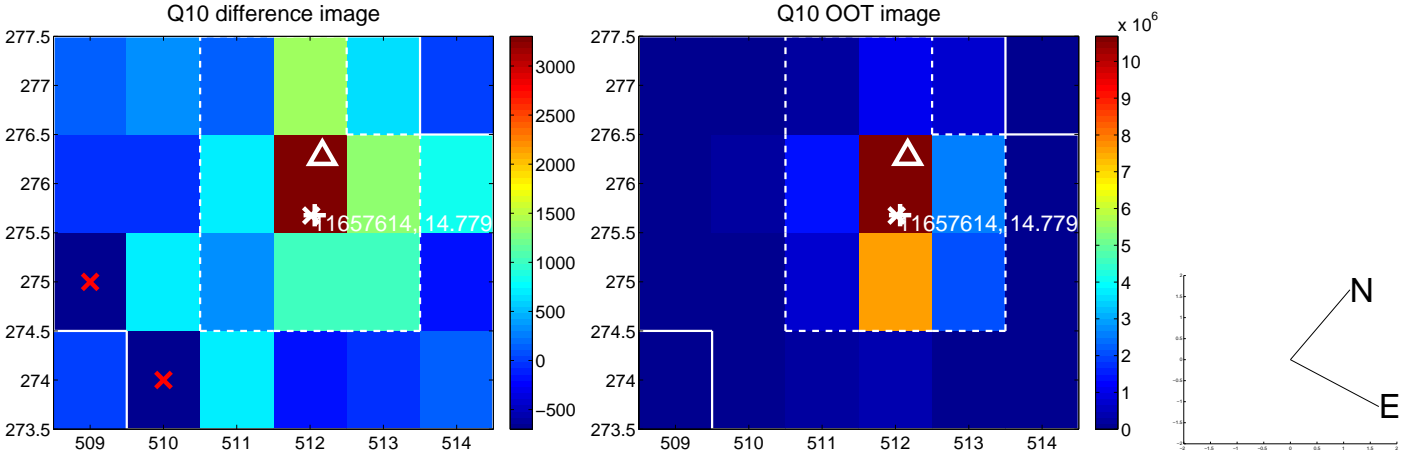
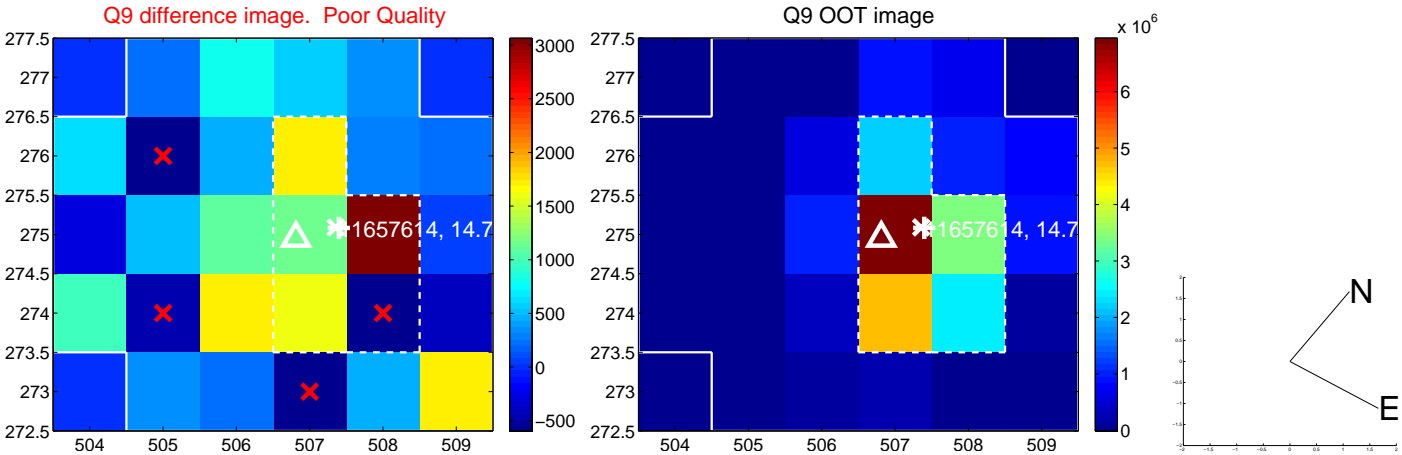
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



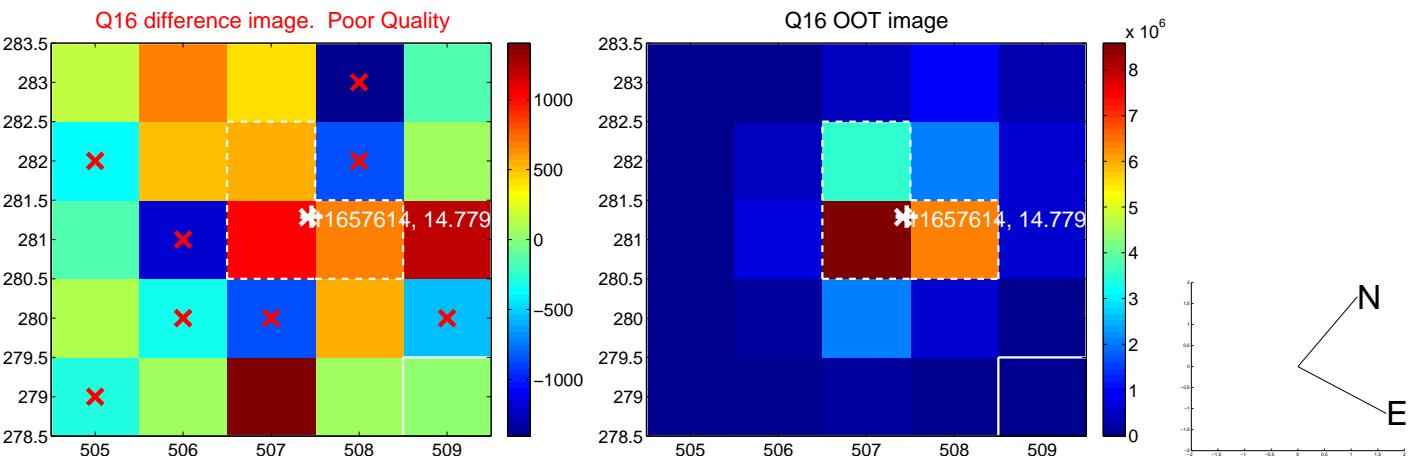
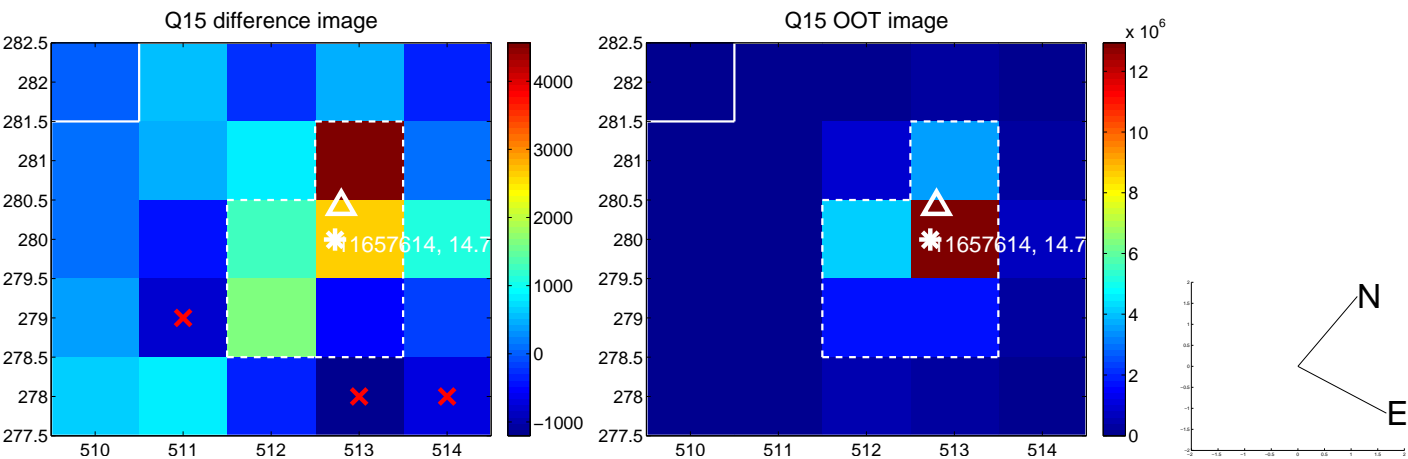
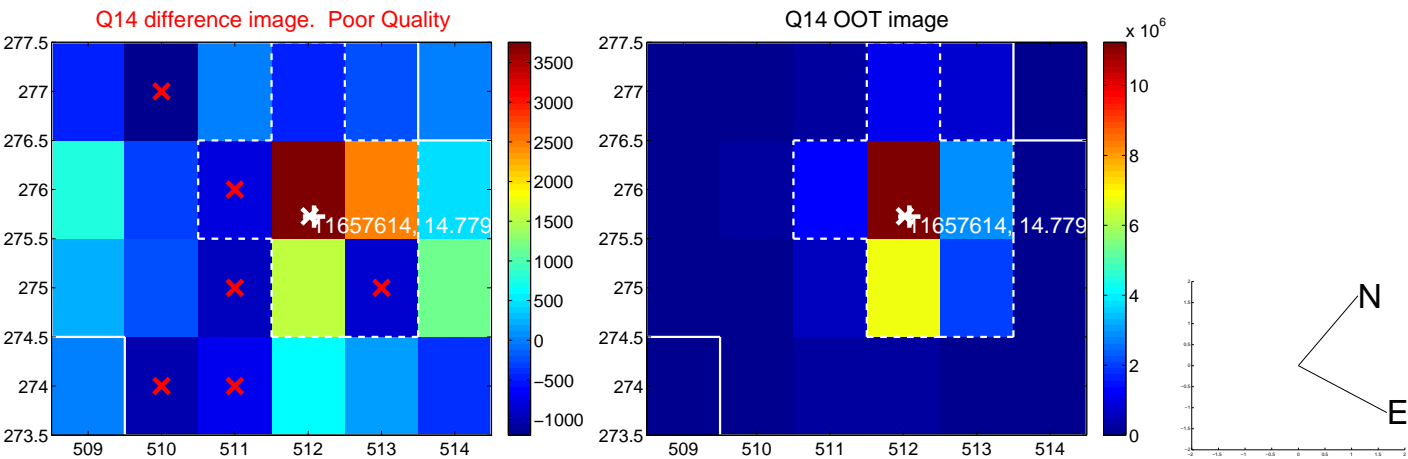
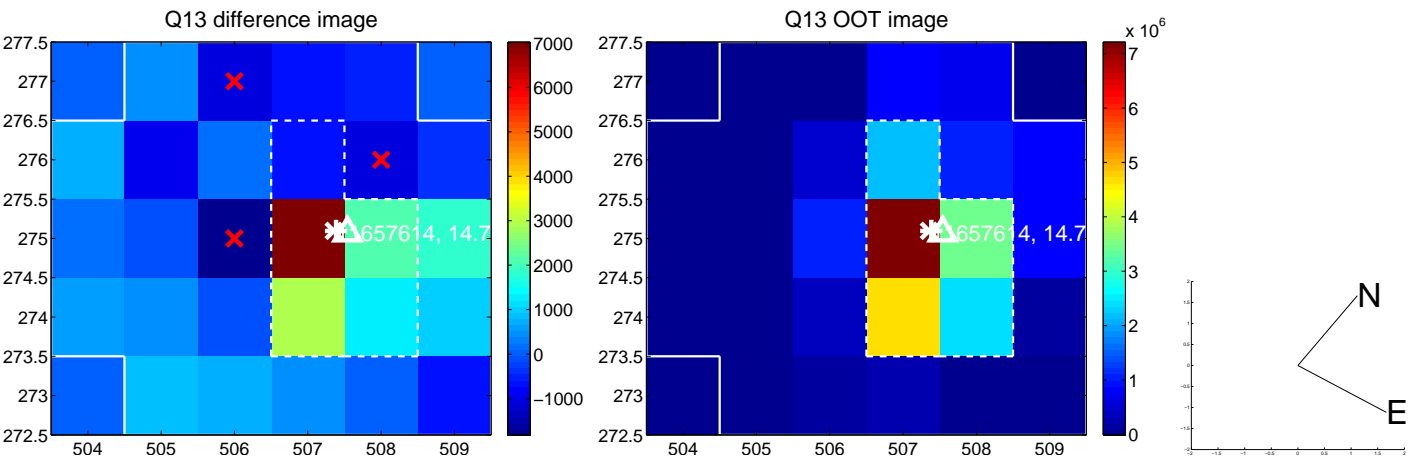
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



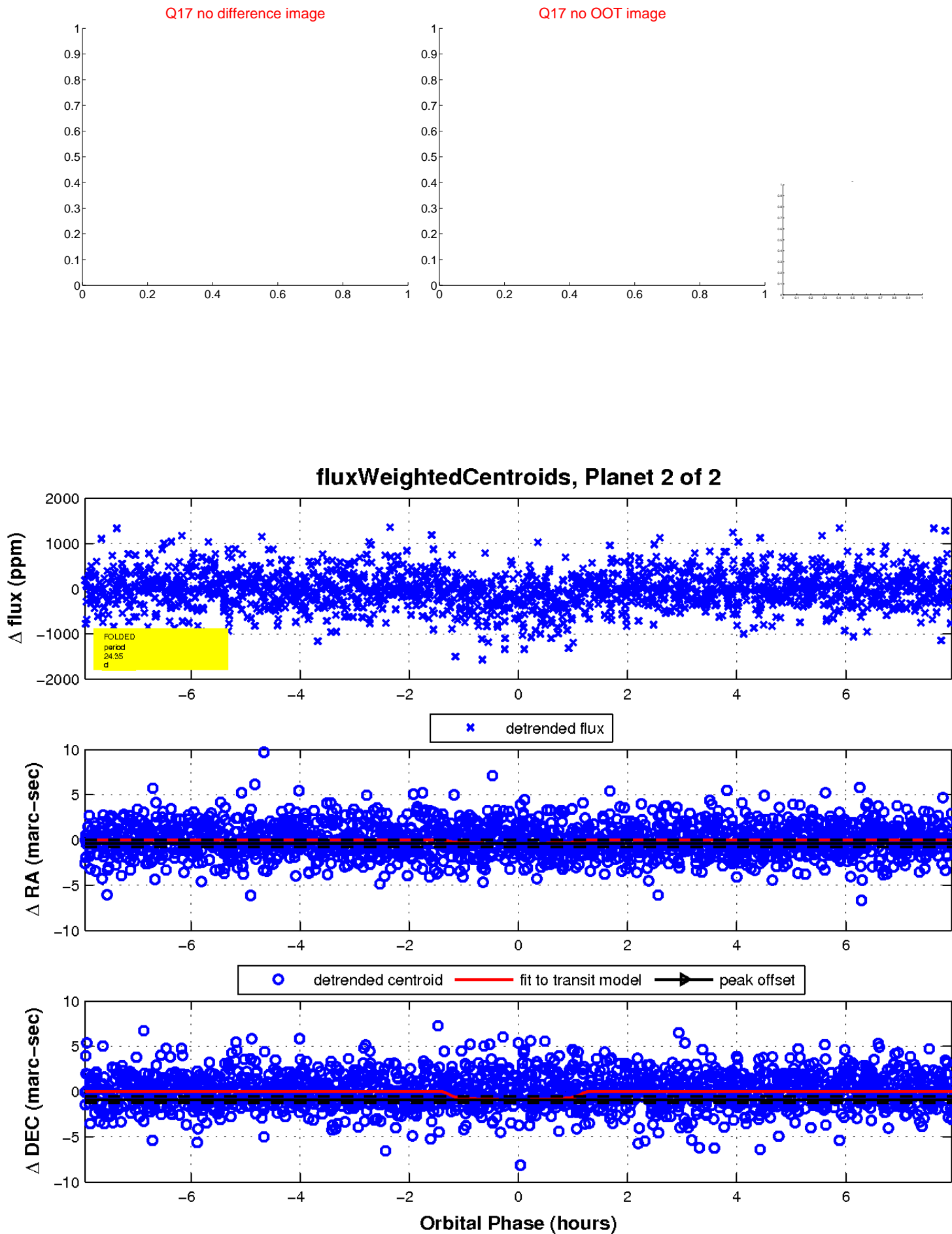
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

