

KIC 008311534

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})
008311534-01	OBS	No	4.402708	135.645384	119.8	15.000	9.0	-1.0	1.10	6434	1.21	617.14
008311534-02	OBS	No	4.403545	133.585374	24.4	25.674	9.1	8.1	1.10	6434	0.55	616.98

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008311534-01	OBS	FP	0.00	1	0	0	0	LPP_DV—CENT_NOFITS
008311534-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—SAME_NTL_PERIOD

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

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

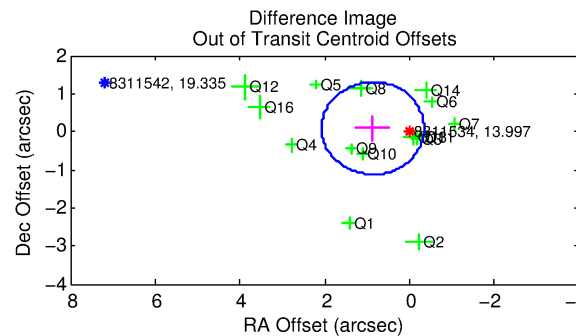
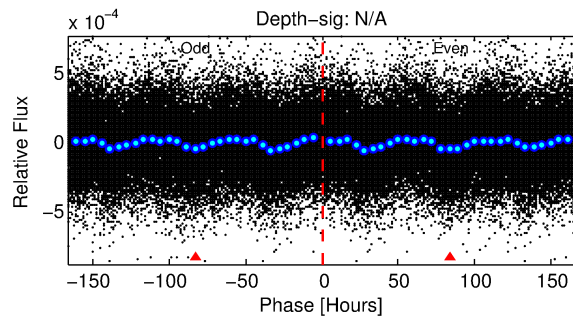
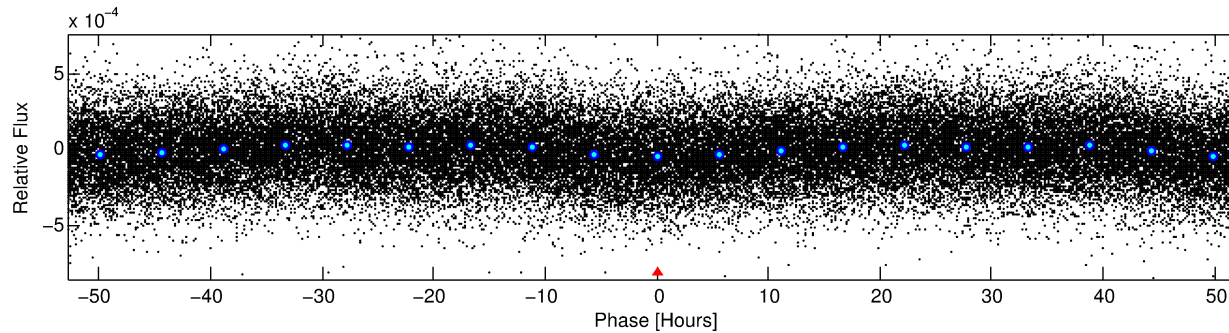
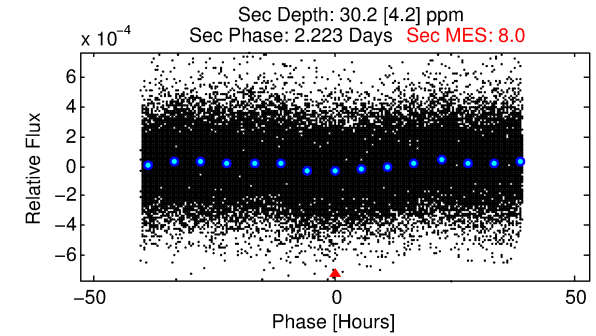
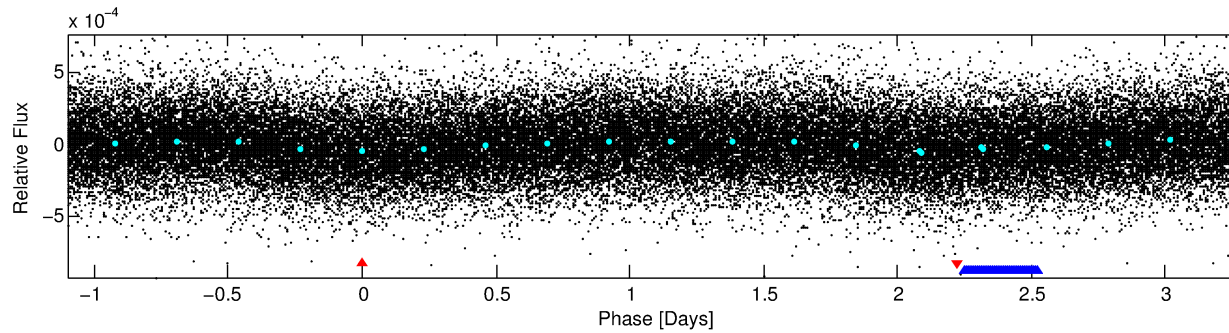
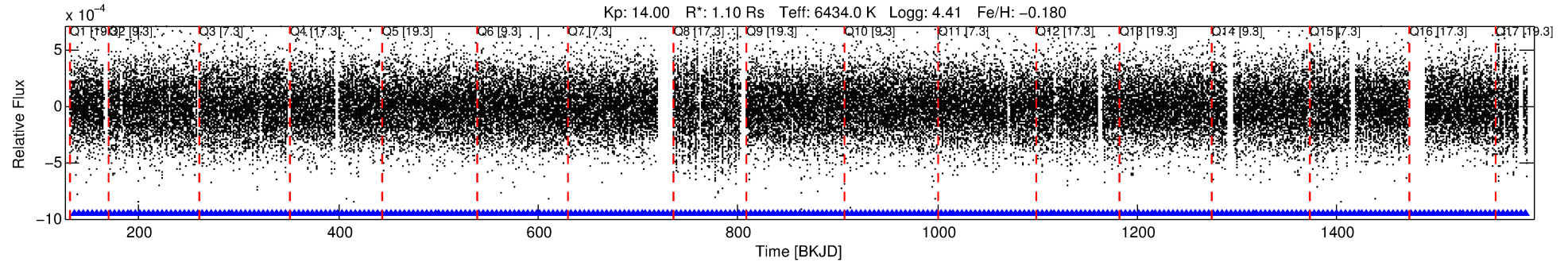
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008311534-01

No Significant Match Found

DV One-Page Summary

KIC: 8311534 Candidate: 1 of 2 Period: 4.403 d



TPS TCE Results:

Period = 4.40271 d
Epoch = 135.6454 BKJD

DV fit results are unavailable

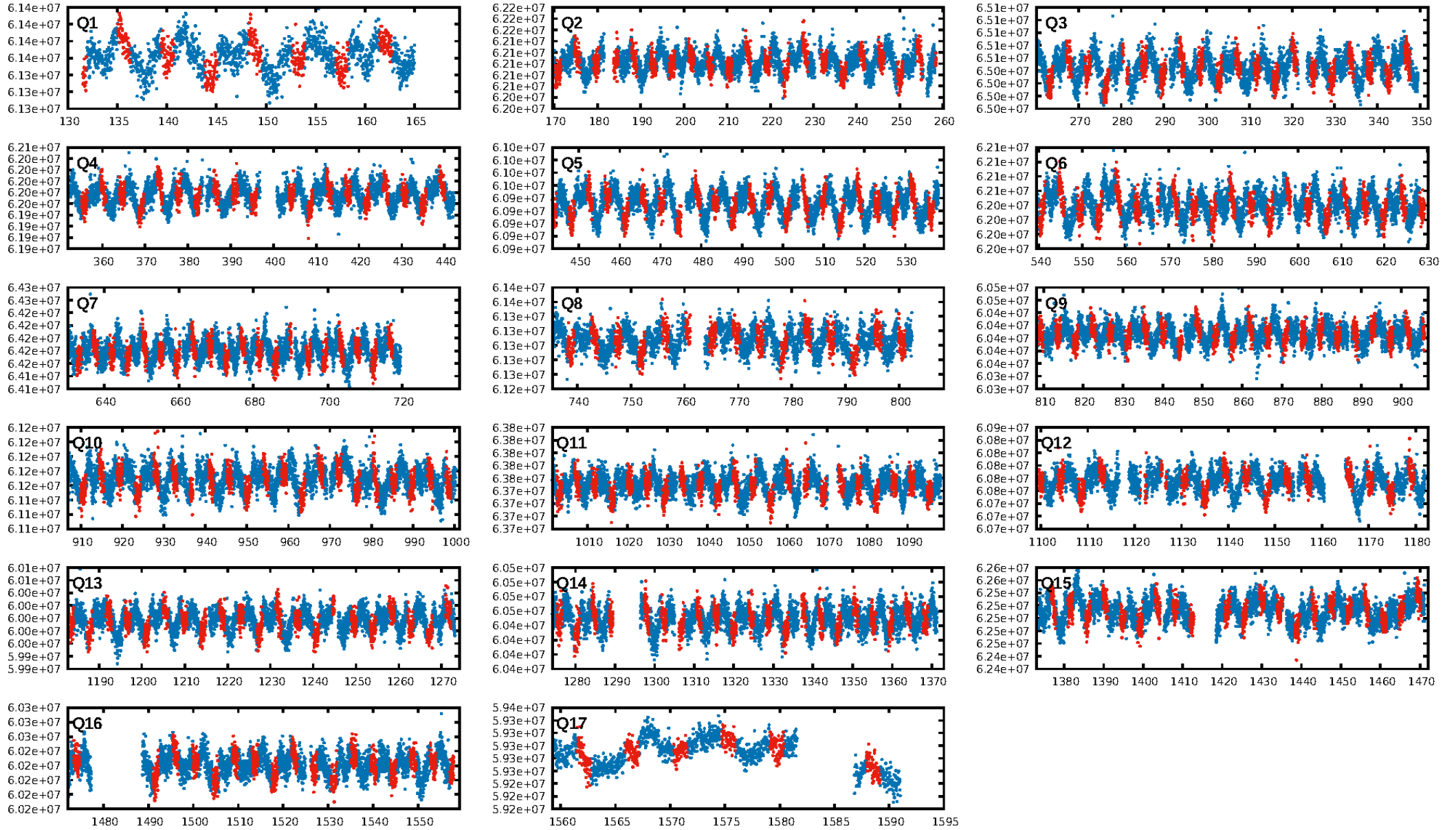
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.1% [0.00σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [300/300]
GhostDiagnostic-chr: 2.436
Centroid-sig: 0.0%
Centroid-so: 0.815 arcsec [2.49σ]
OotOffset-rm: 0.869 arcsec [2.15σ]
KicOffset-rm: 0.838 arcsec [2.02σ]
OotOffset-st: 4/3/4/4 [15]
KicOffset-st: 4/3/4/4 [15]
DiffImageQuality-fgm: 0.93 [14/15]
DiffImageOverlap-fno: 0.00 [0/17]

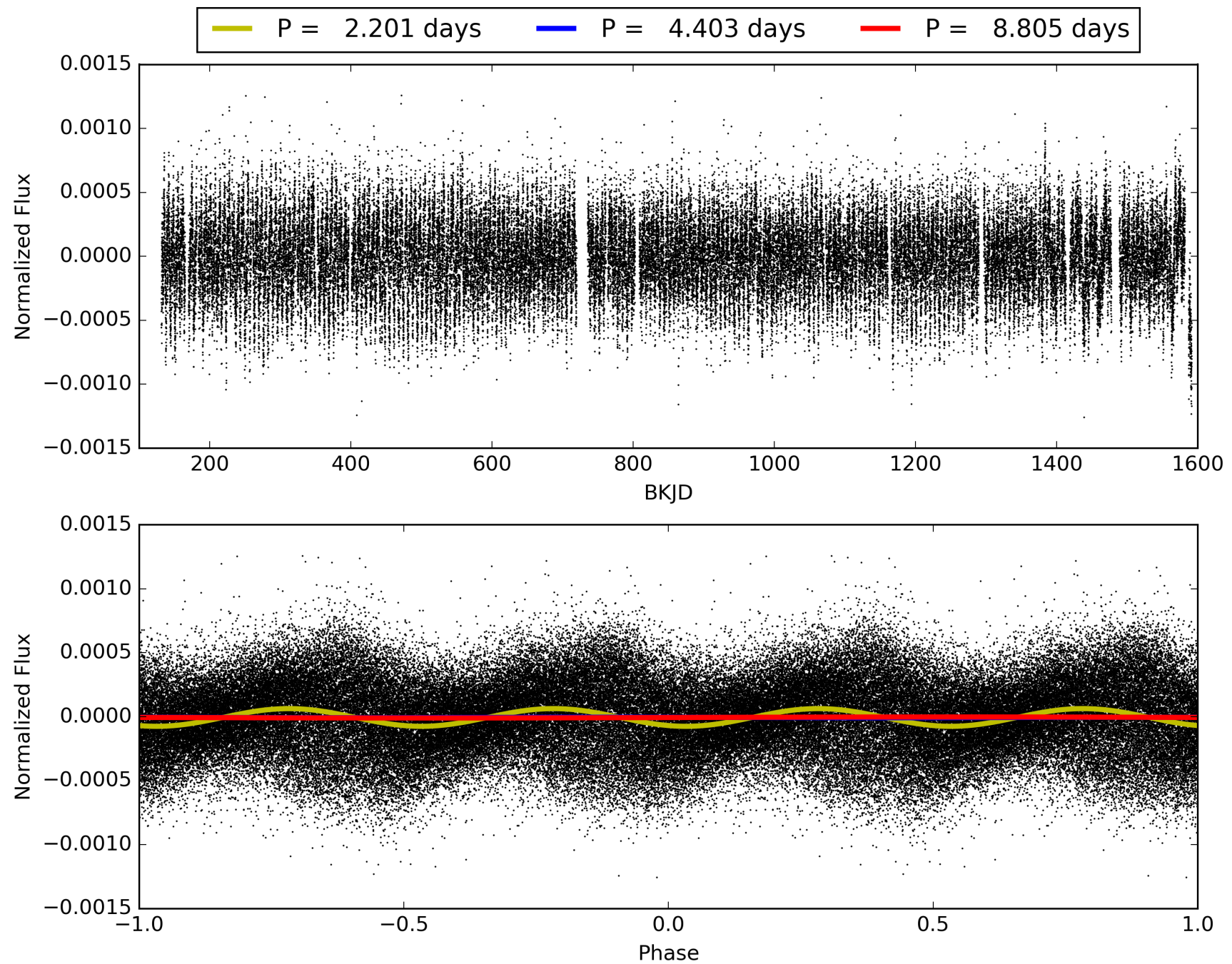
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 17:21:14 Z

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

TCE 008311534-01, PDC Light Curves

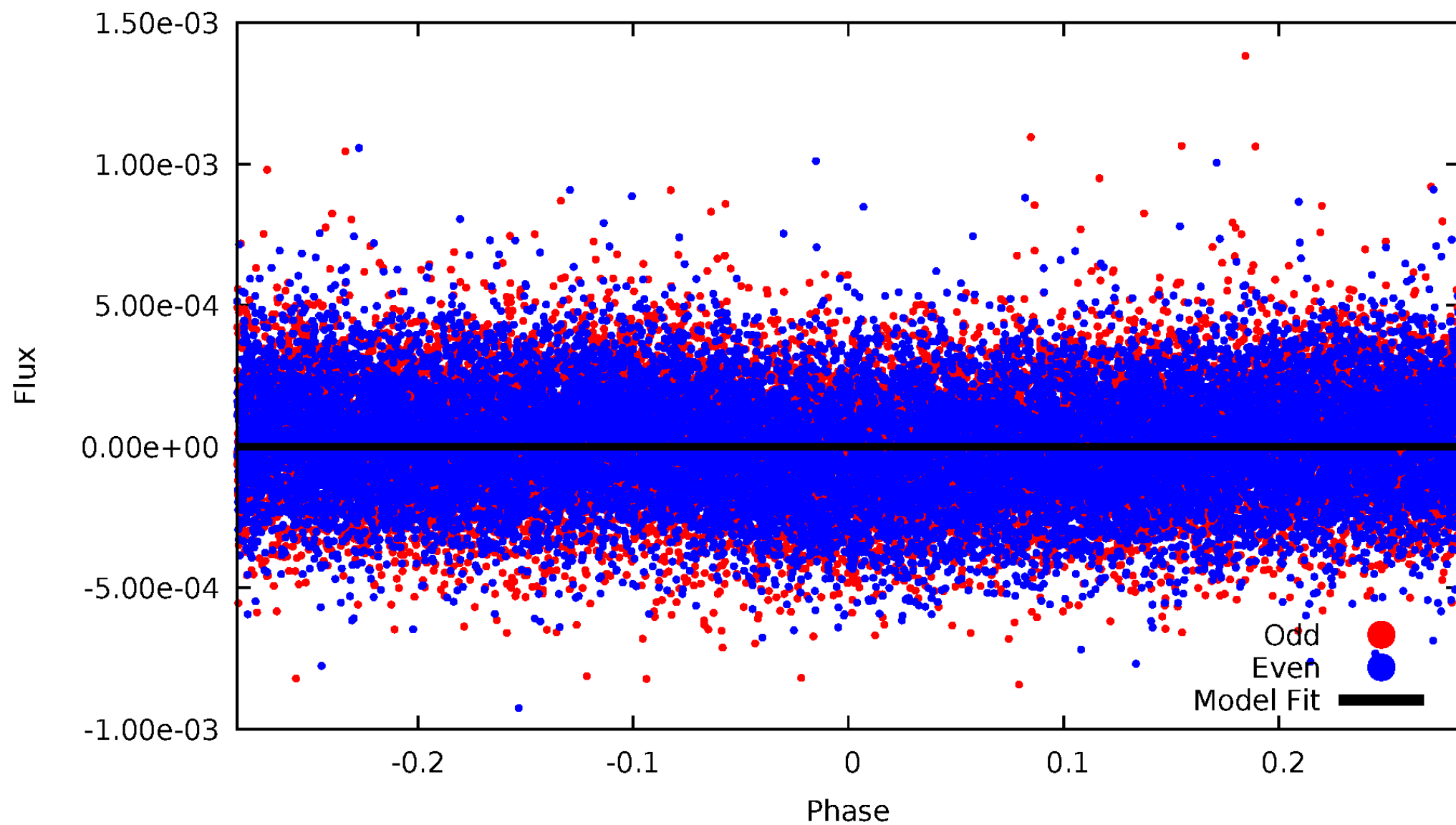


TCE 008311534-01



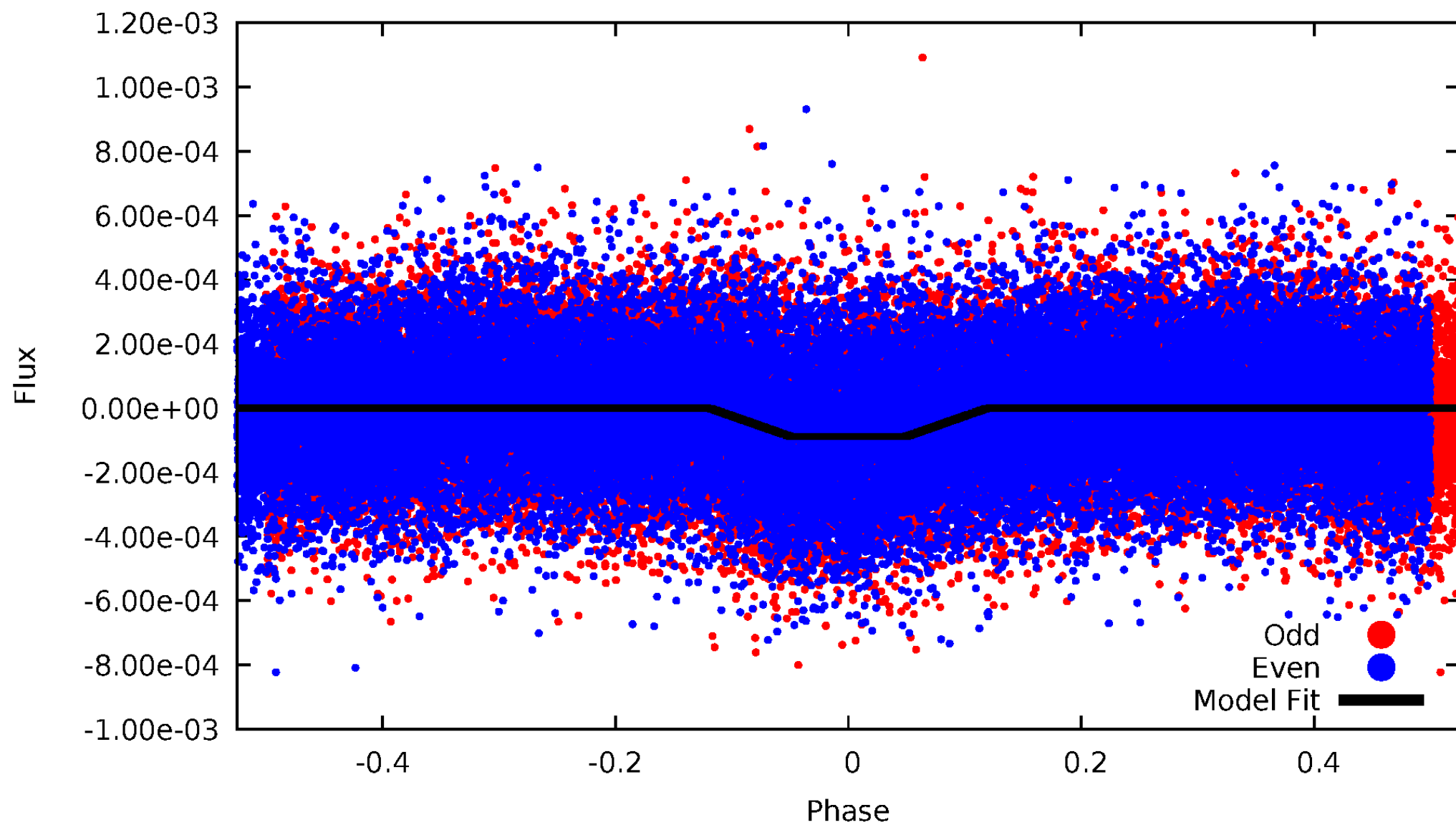
DV Odd/Even

TCE 008311534-01

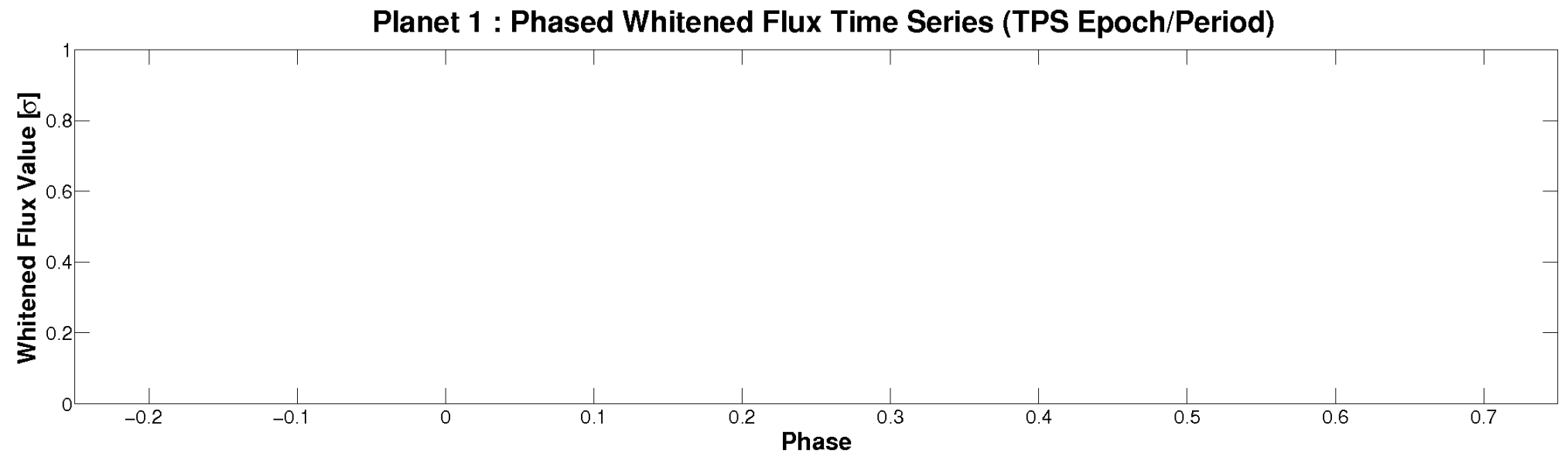
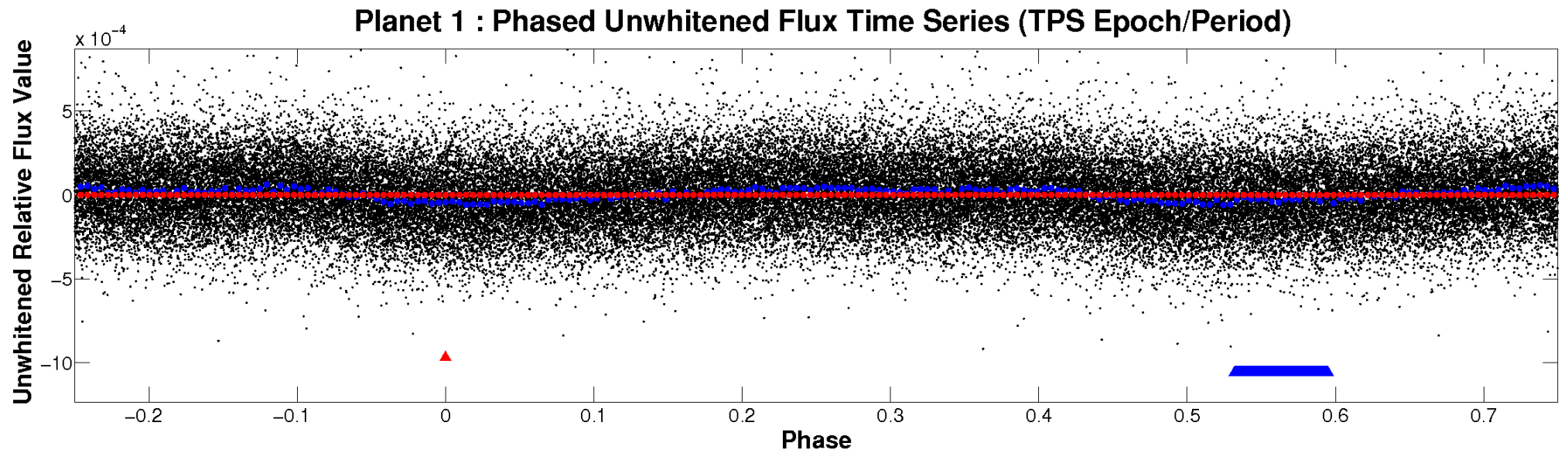


ALT Odd/Even

TCE 008311534-01

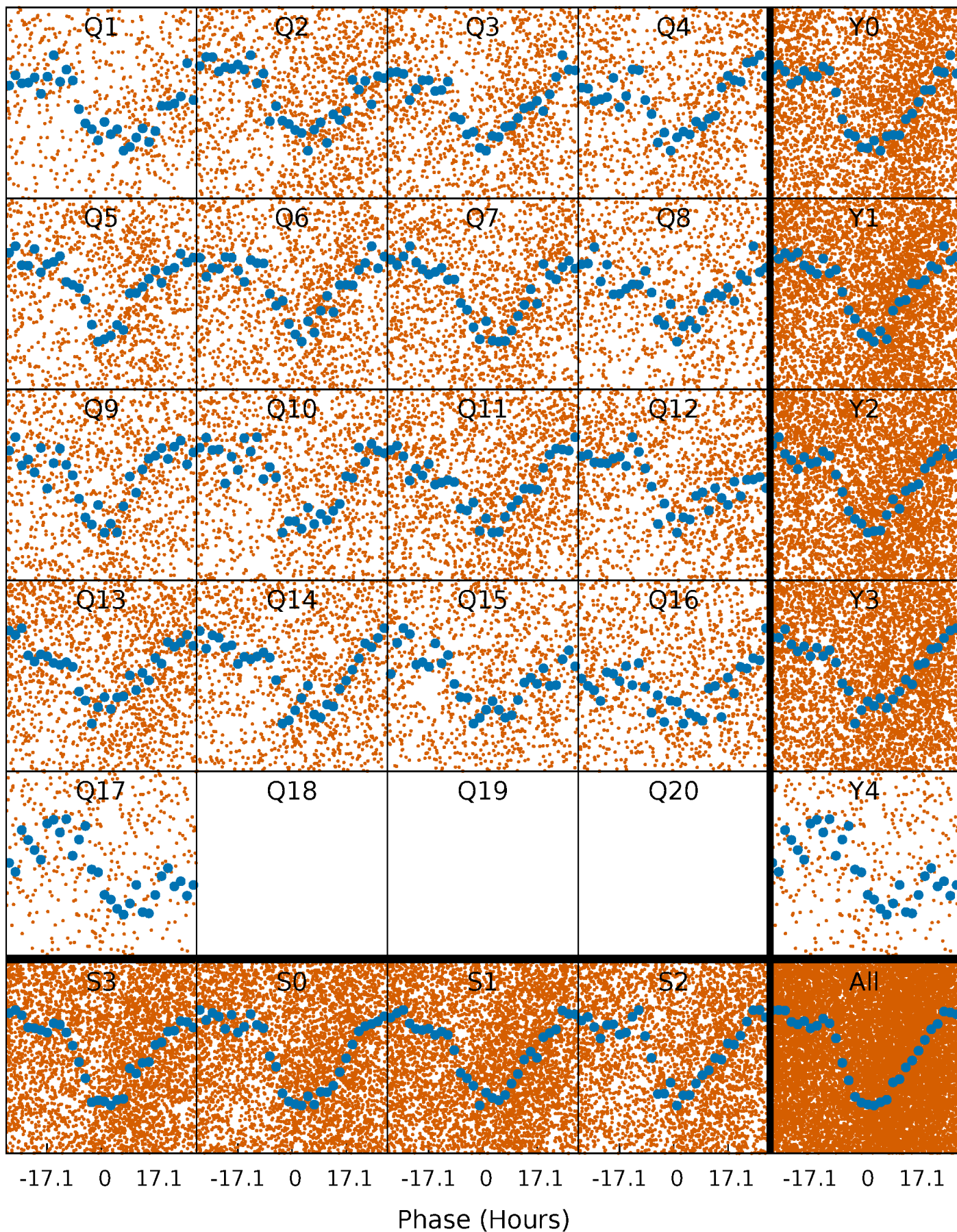


Non-Whitened Vs. Whitened Light Curve



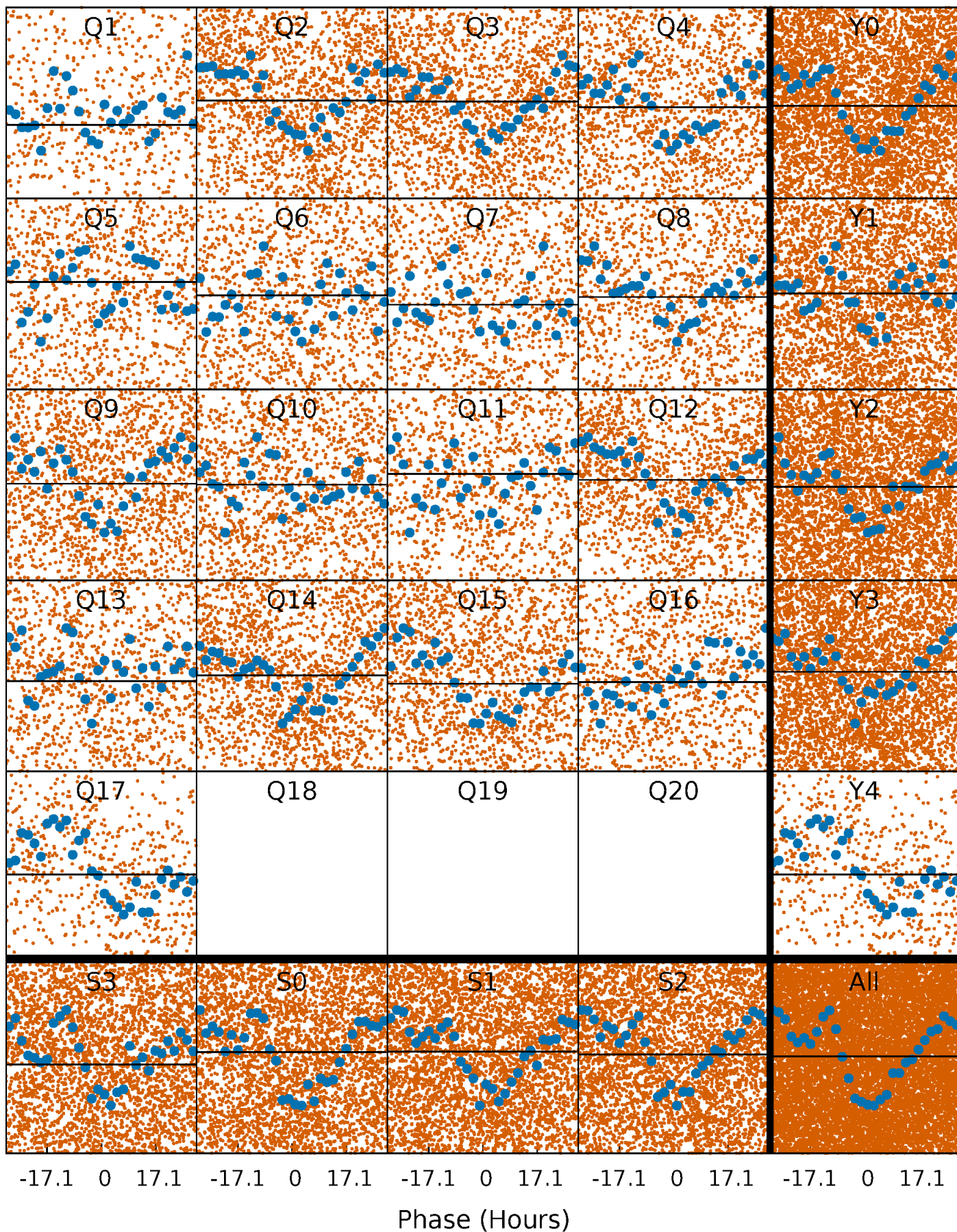
PDC Quarter-Phased Transit Curves

TCE 008311534-01 P= 4.402708 Days $T_0=135.645384$ (BKJD)



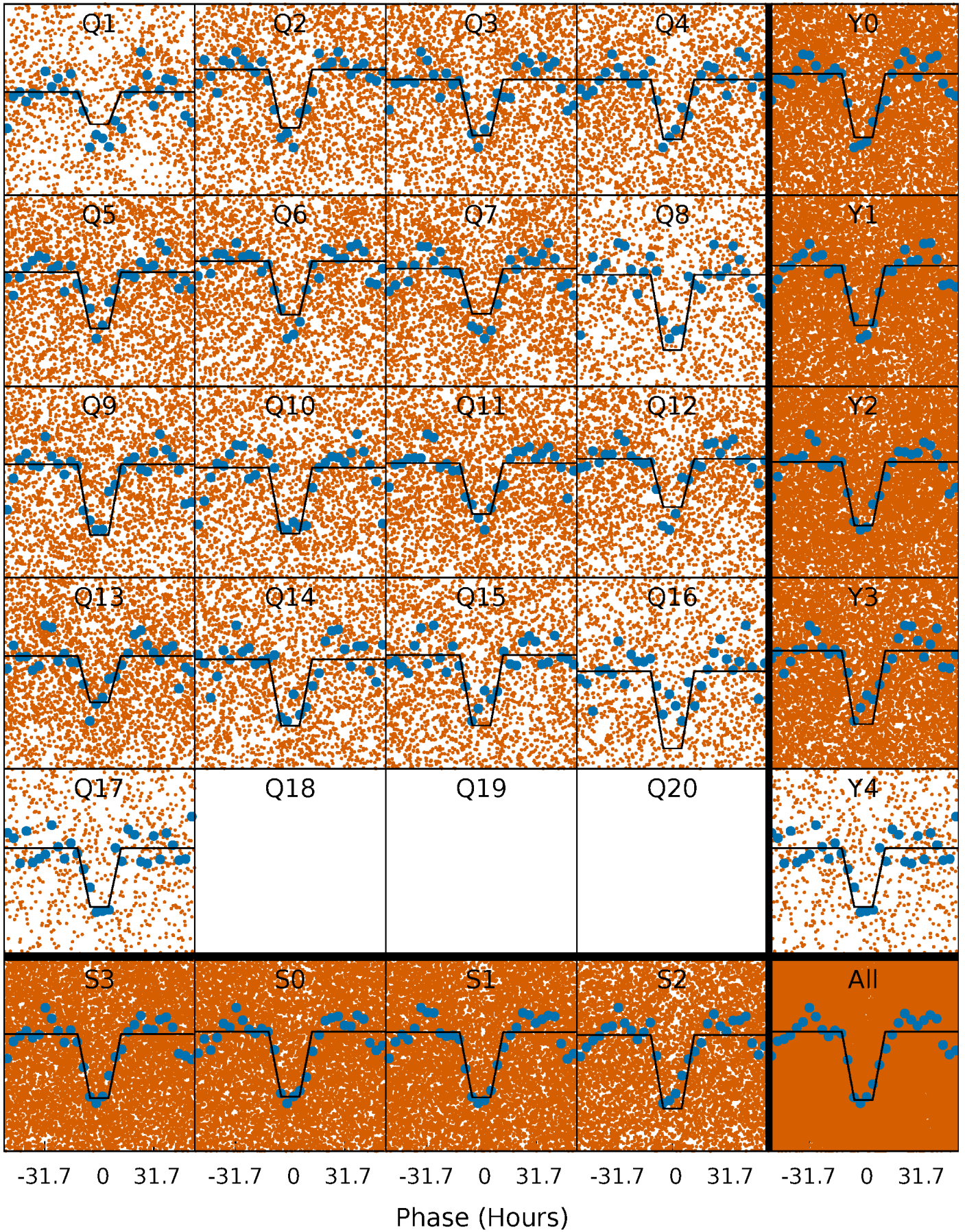
DV Quarter-Phased Transit Curves

TCE 008311534-01 P= 4.402708 Days $T_0=135.645384$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

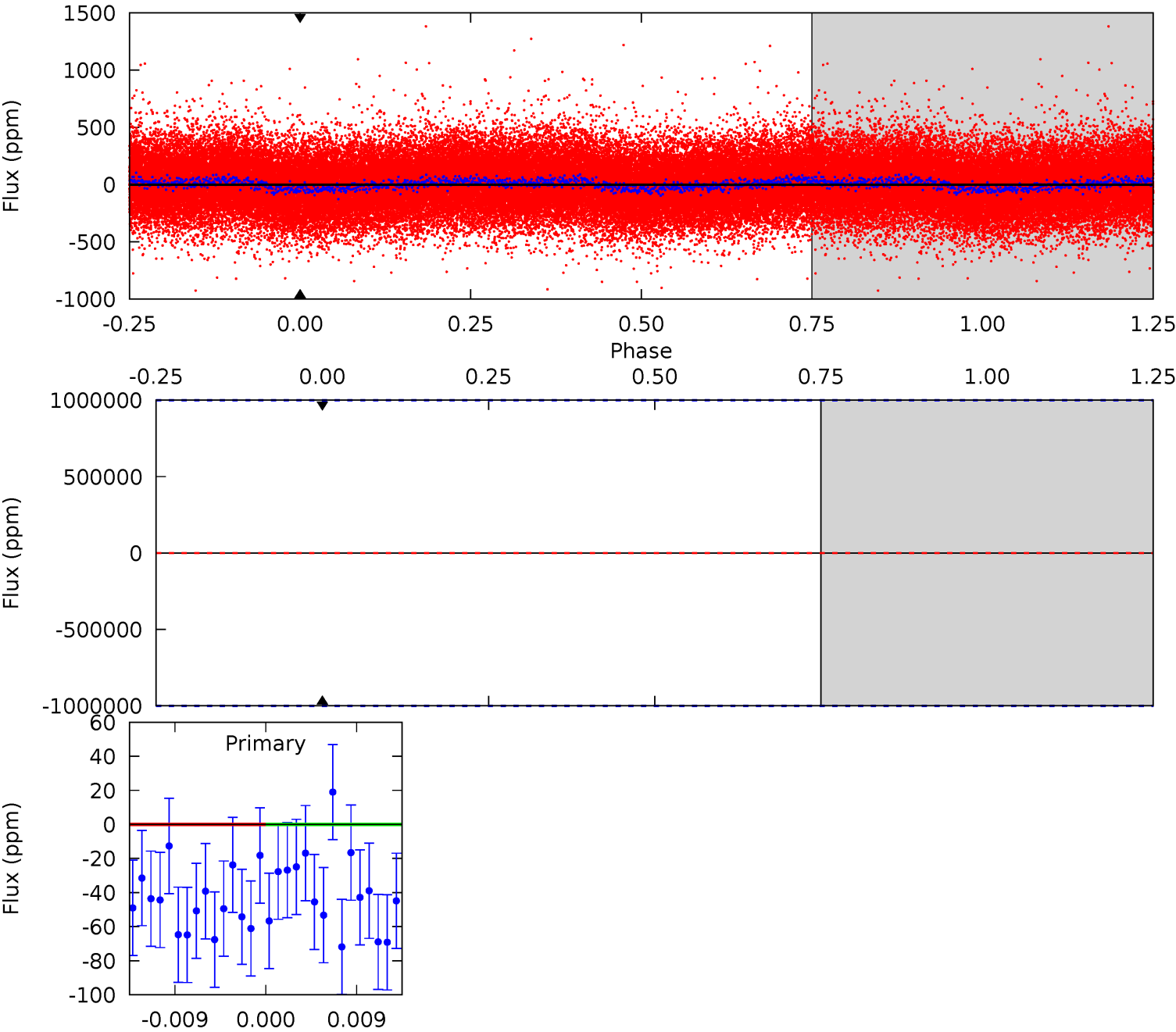
TCE 008311534-01 P= 4.402708 Days $T_0=135.738322$ (BKJD)



DV Model-Shift Uniqueness Test

008311534-01, P = 4.402708 Days, E = 131.242676 Days

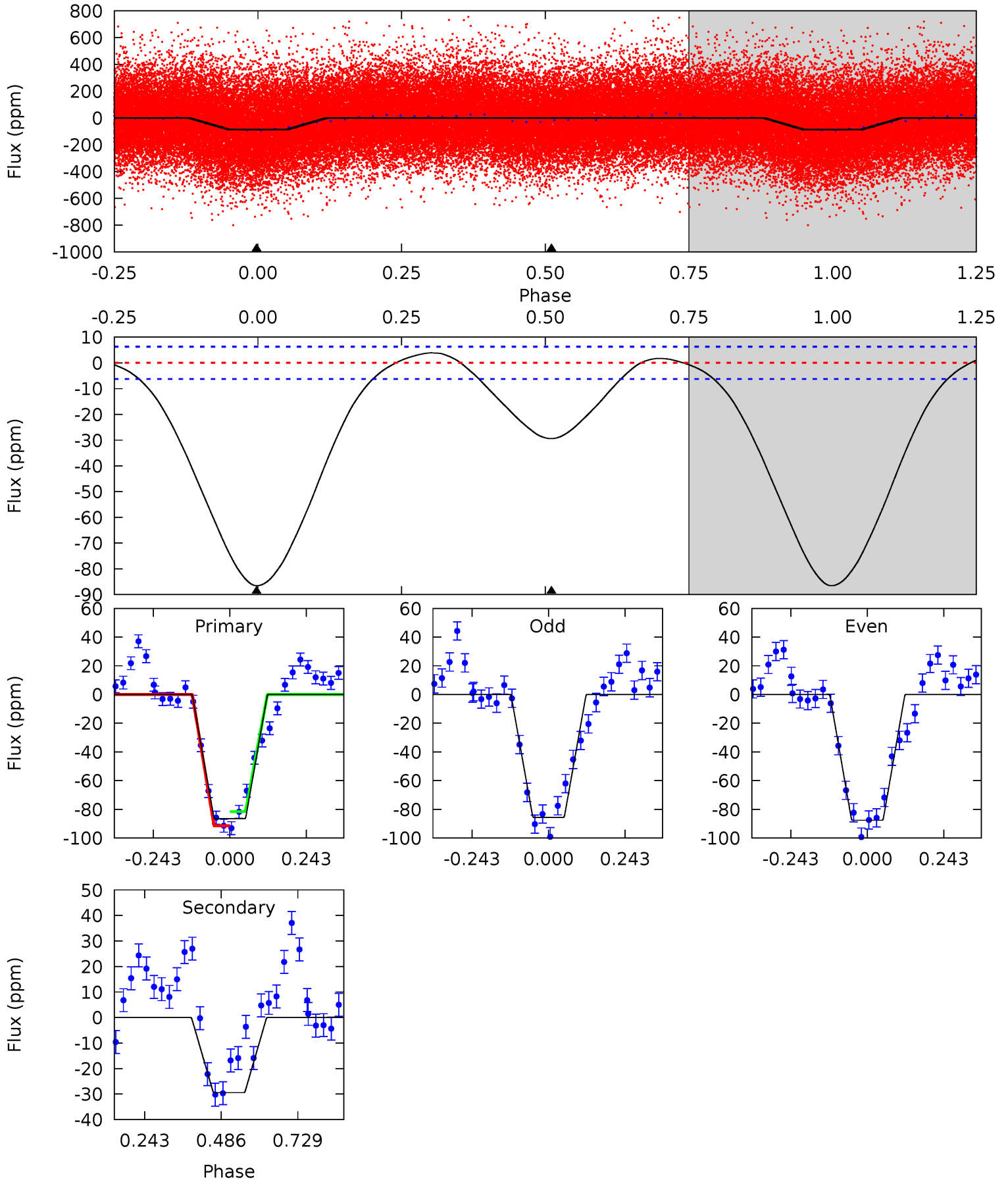
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

008311534-01, P = 4.402708 Days, E = 131.335614 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
60.2	20.4	0	0	4.37	1.17	1.30	60.2	60.2	20.4	20.4	0.71	1.01	0.04	3.41



Stellar Parameters For KIC 008311534

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6434^{+154}_{-193}	$4.411^{+0.065}_{-0.195}$	$-0.180^{+0.250}_{-0.300}$	$1.101^{+0.322}_{-0.138}$	$1.137^{+0.152}_{-0.137}$	$1.202^{+0.394}_{-0.611}$
	+2%/-3%	+1%/-4%	+139%/-167%	+29%/-13%	+13%/-12%	+33%/-51%
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 008311534-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	0 ± 1000000	$9.01^{+9.20}_{-6.35}$	1806^{+124}_{-86}	-5011^{+31353}_{-24079}	$-40.407^{+3320.486}_{-3681.114}$
Alt.	-29 ± 1	$8.83^{+9.64}_{-6.28}$	1803^{+136}_{-90}	2397^{+1335}_{-4613}	$0.611^{+7.422}_{-0.468}$

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

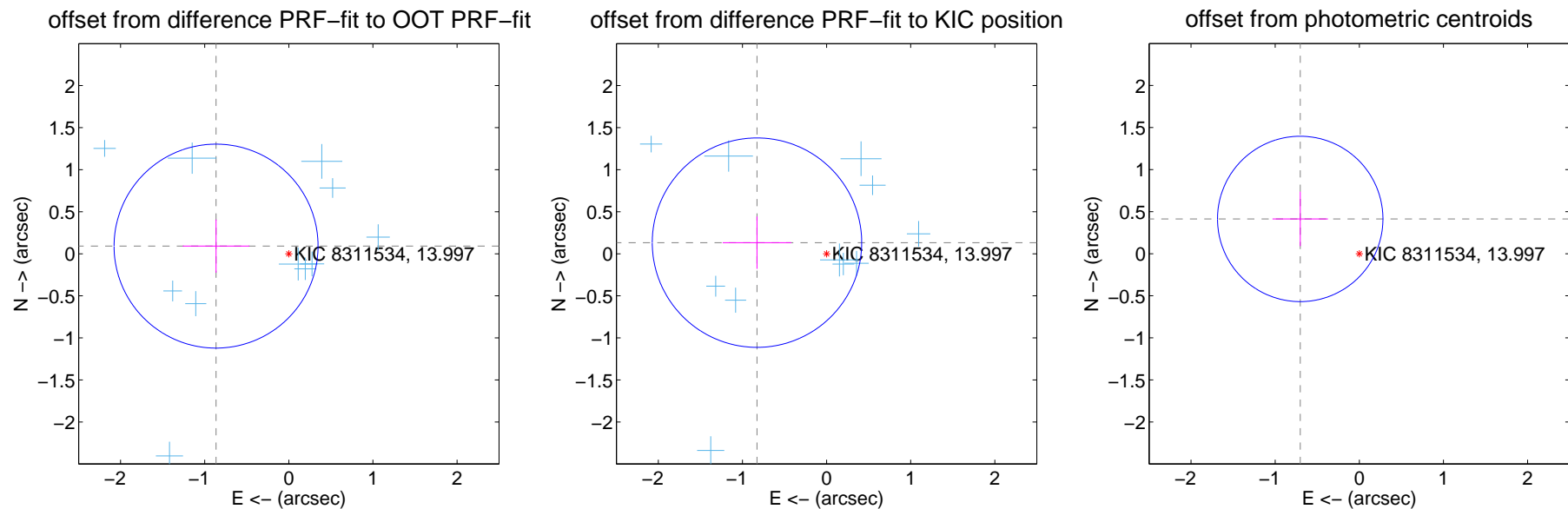
DV Centroid Data

Supplemental centroid analysis for 008311534-01. Kepler magnitude: 14.00. Transit SNR -1.00

There are 14 quarters with good PRF difference image offsets

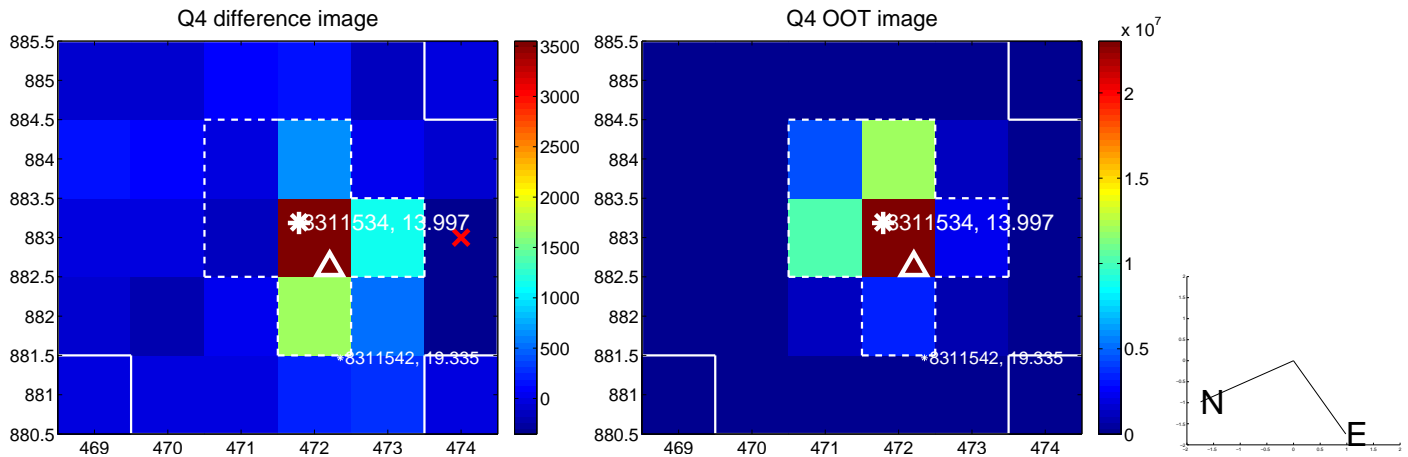
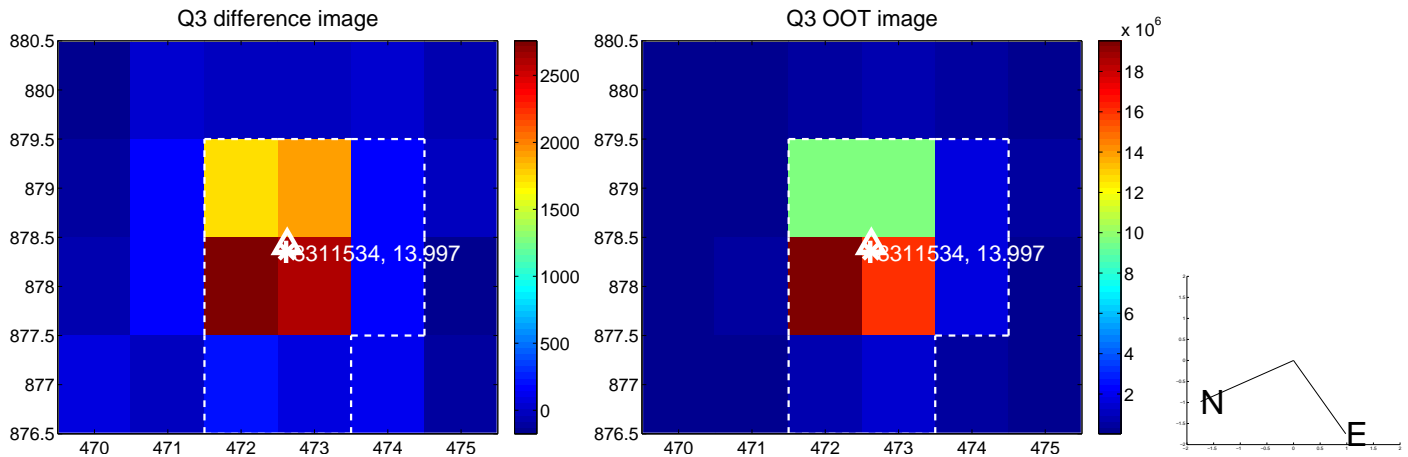
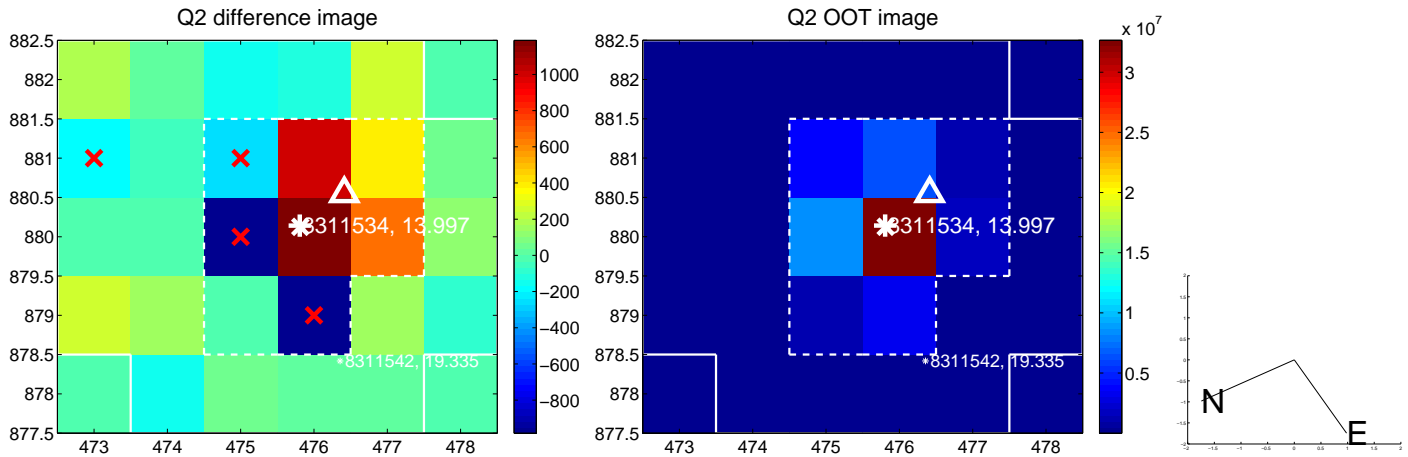
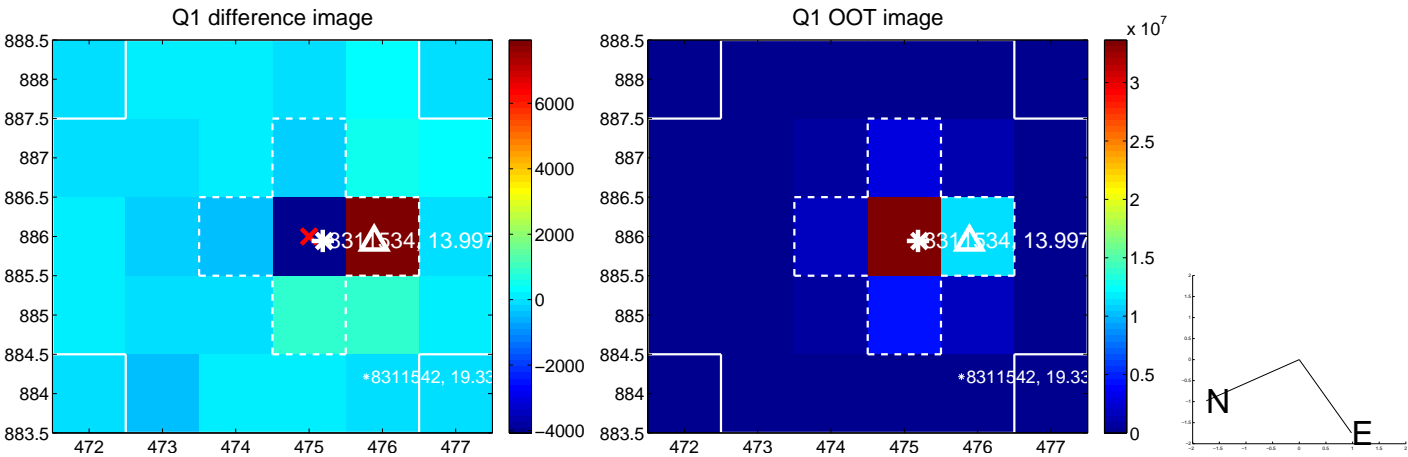
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.869 ± 0.404	2.15	0.865 ± 0.396	0.091 ± 0.316
PRF-fit source offset from KIC position	0.838 ± 0.415	2.02	0.827 ± 0.408	0.132 ± 0.312
photometric centroid source offset	0.81 ± 0.33	2.49	0.70 ± 0.33	0.41 ± 0.32

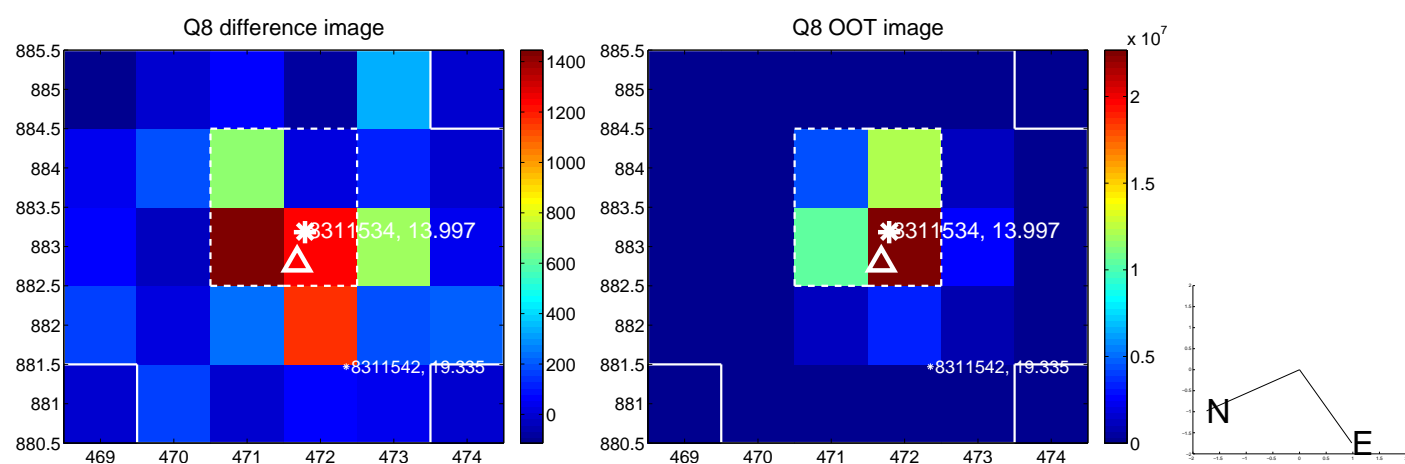
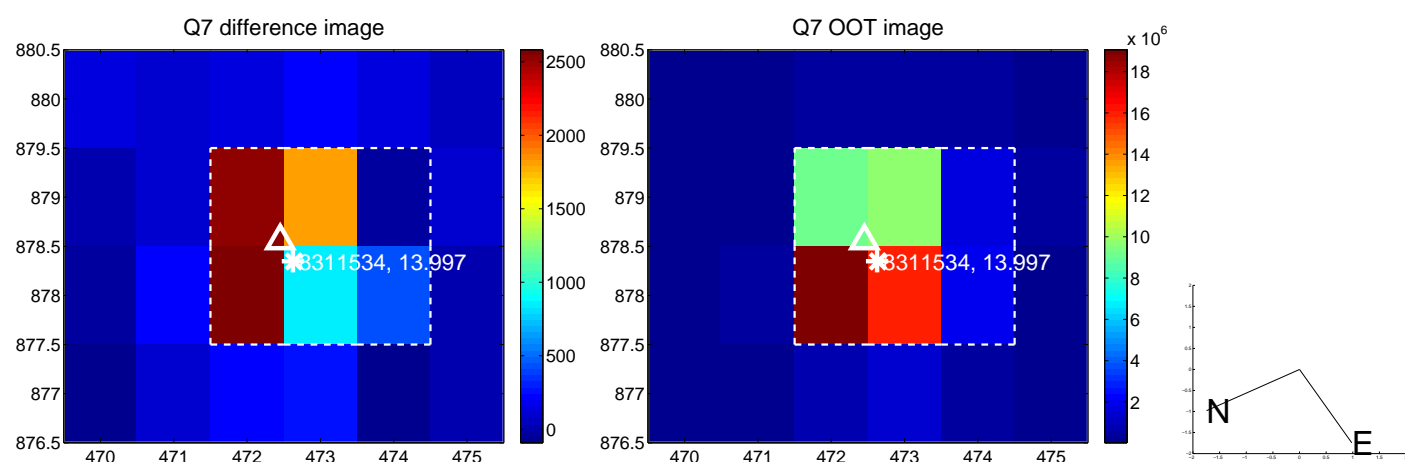
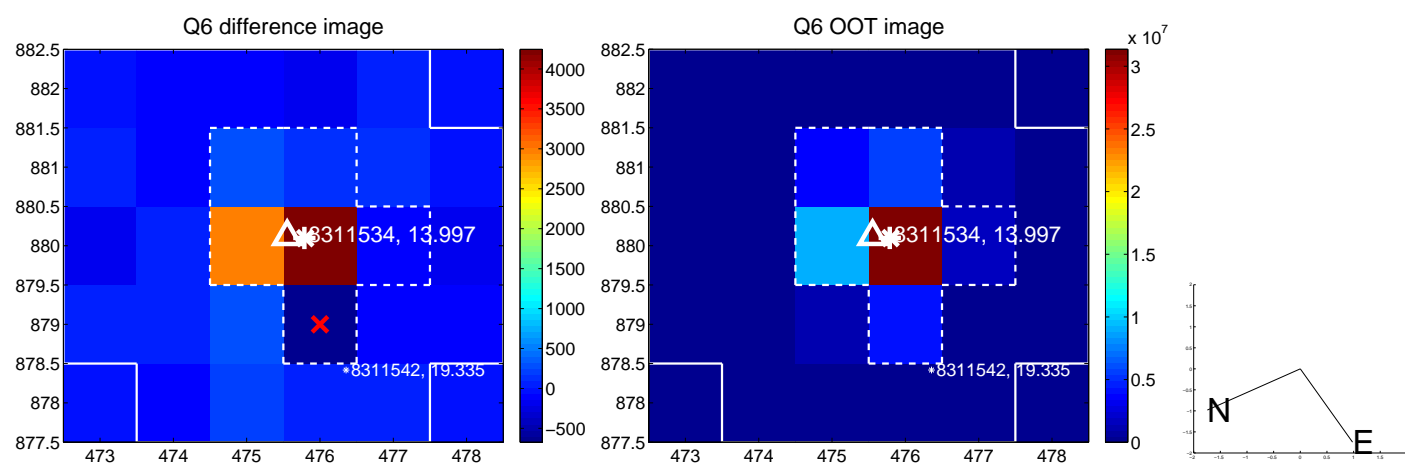
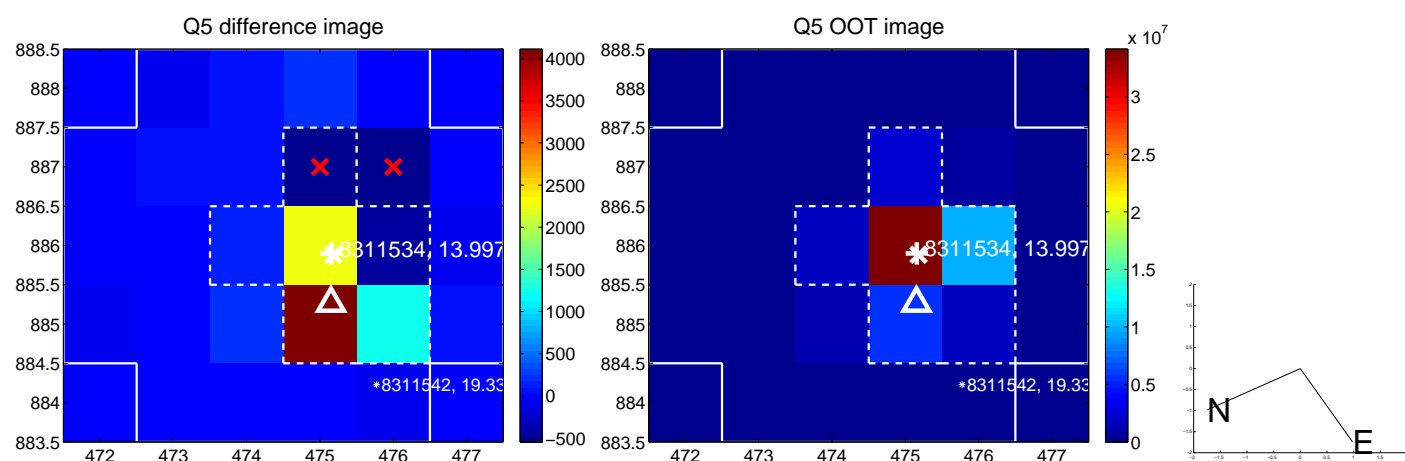


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

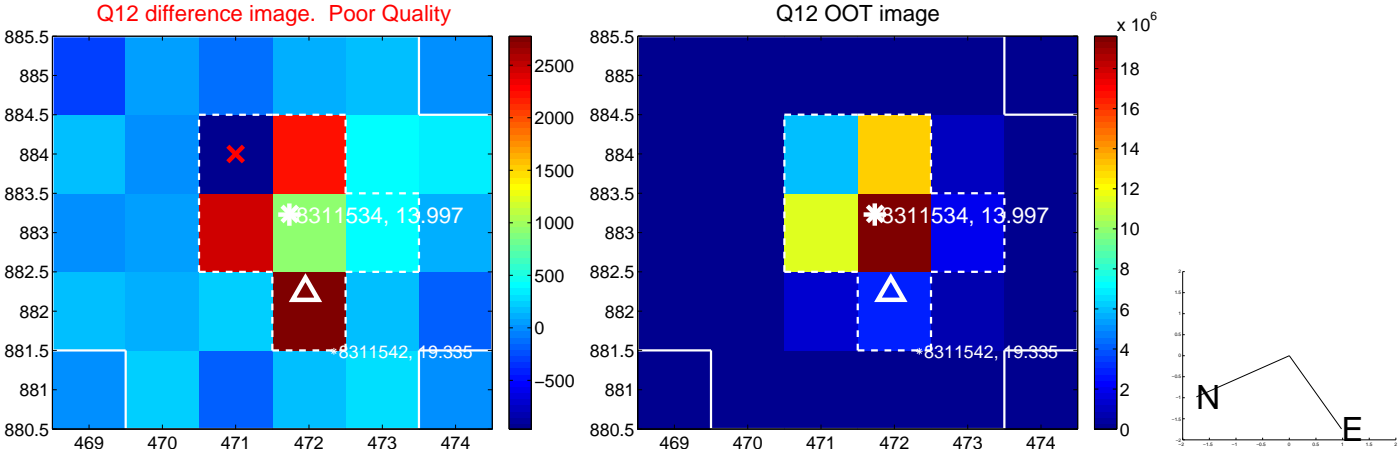
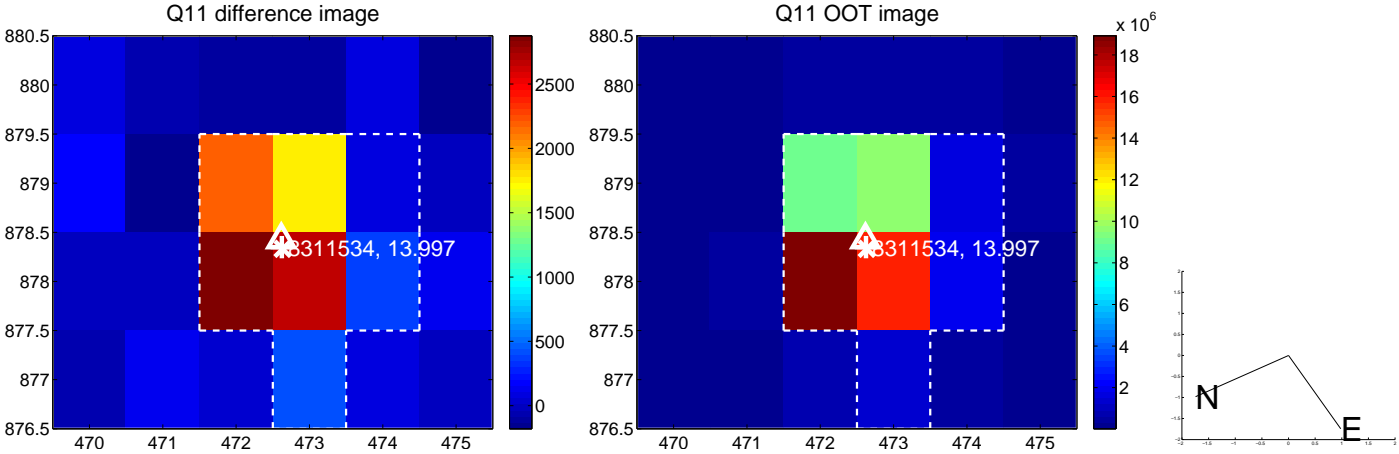
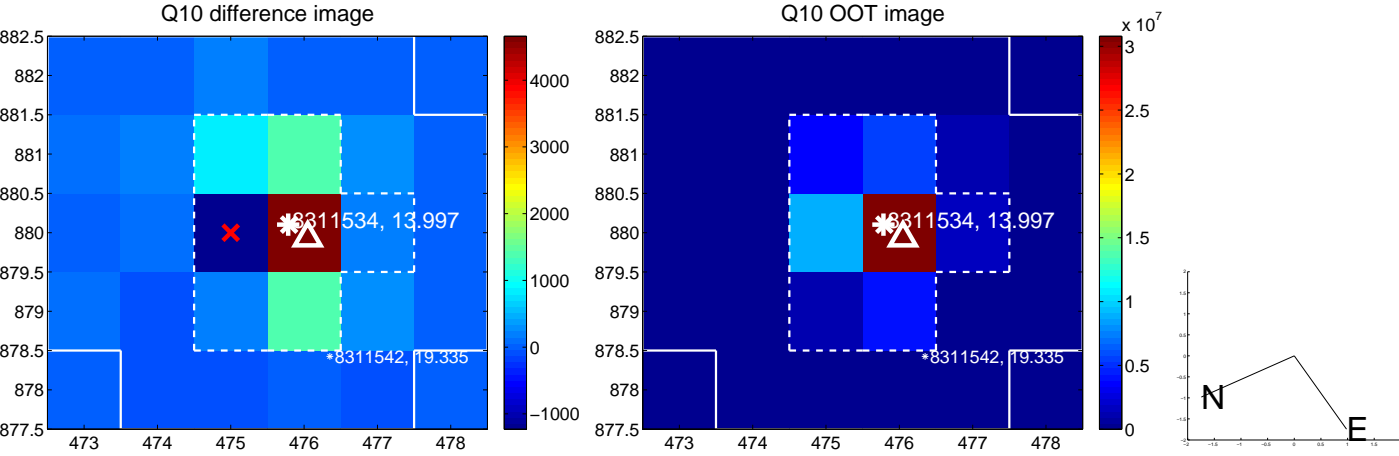
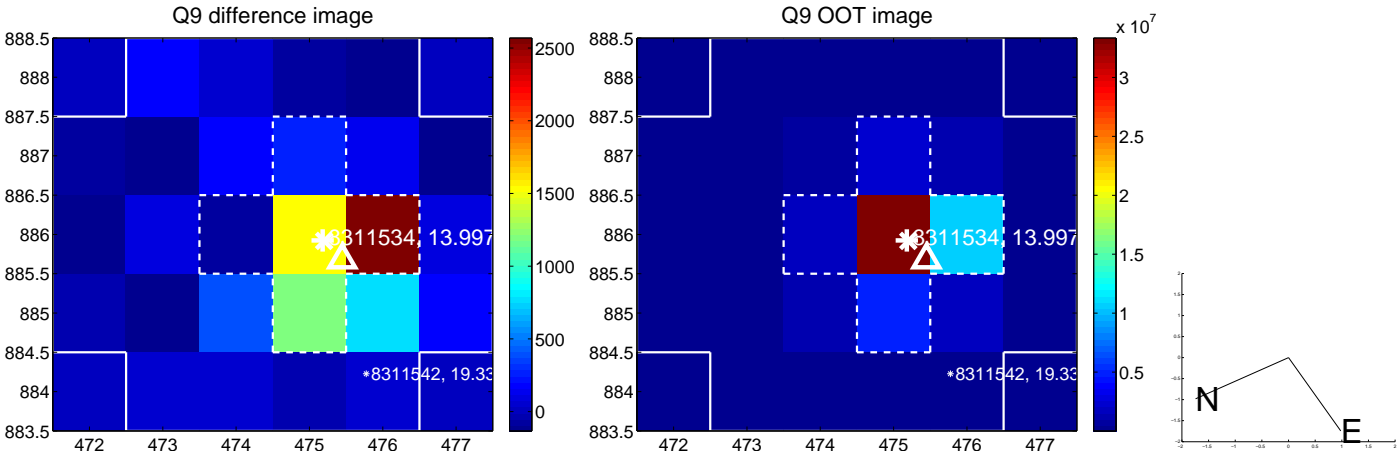
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



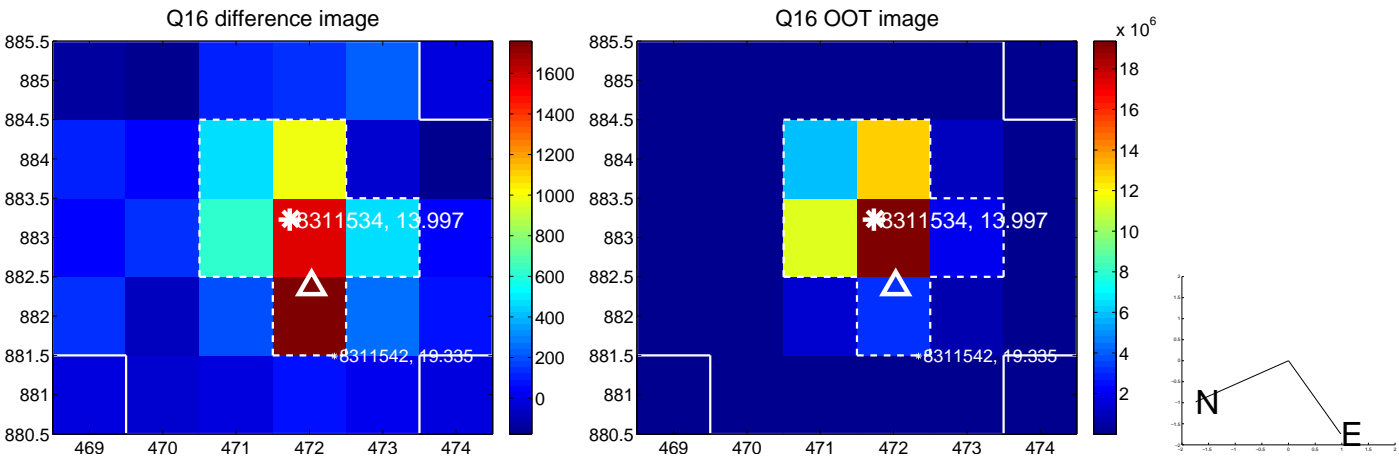
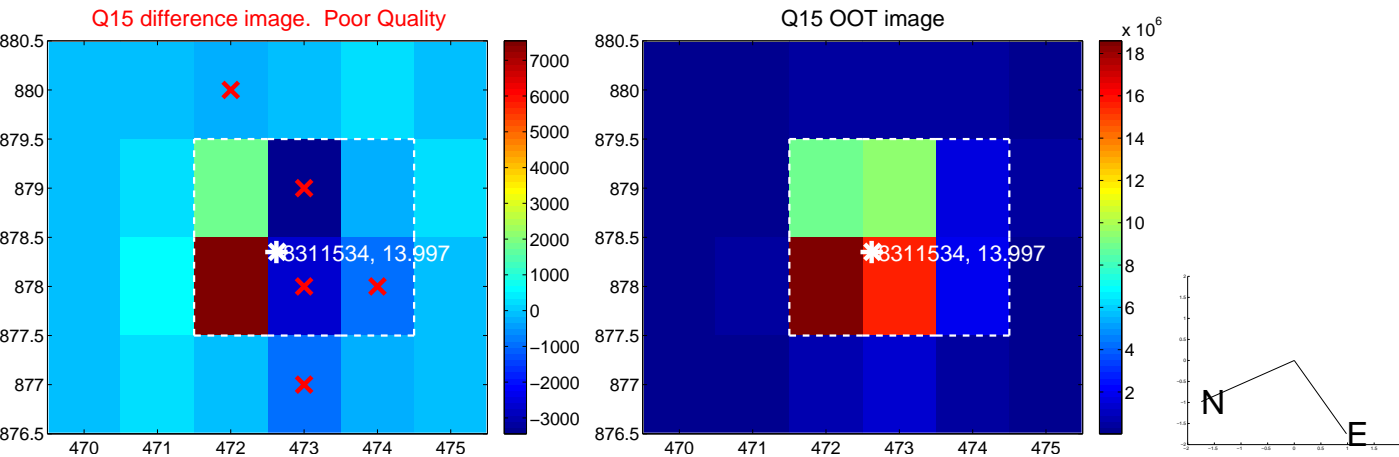
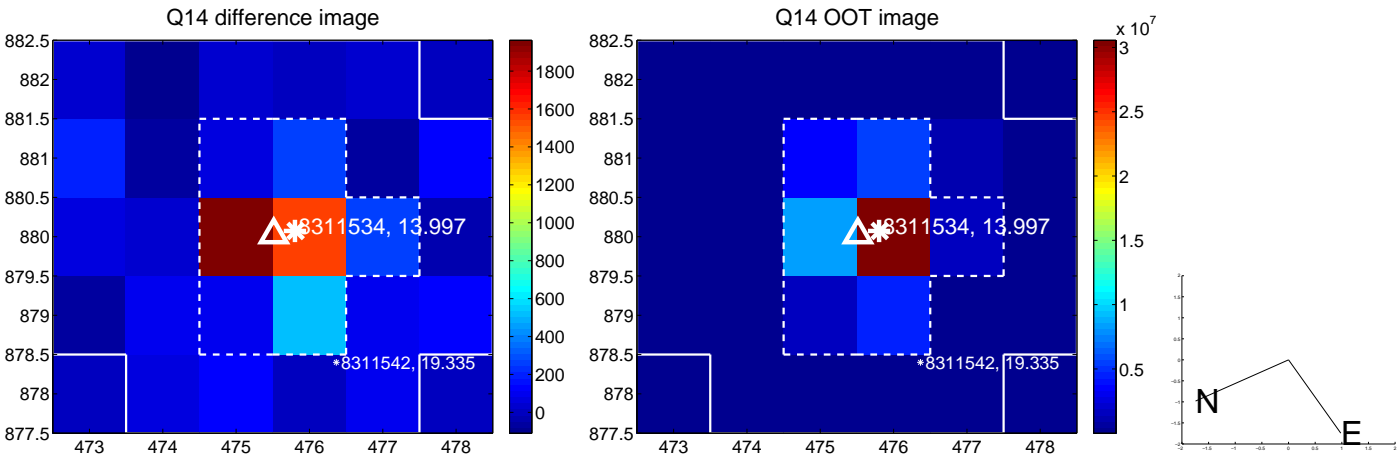
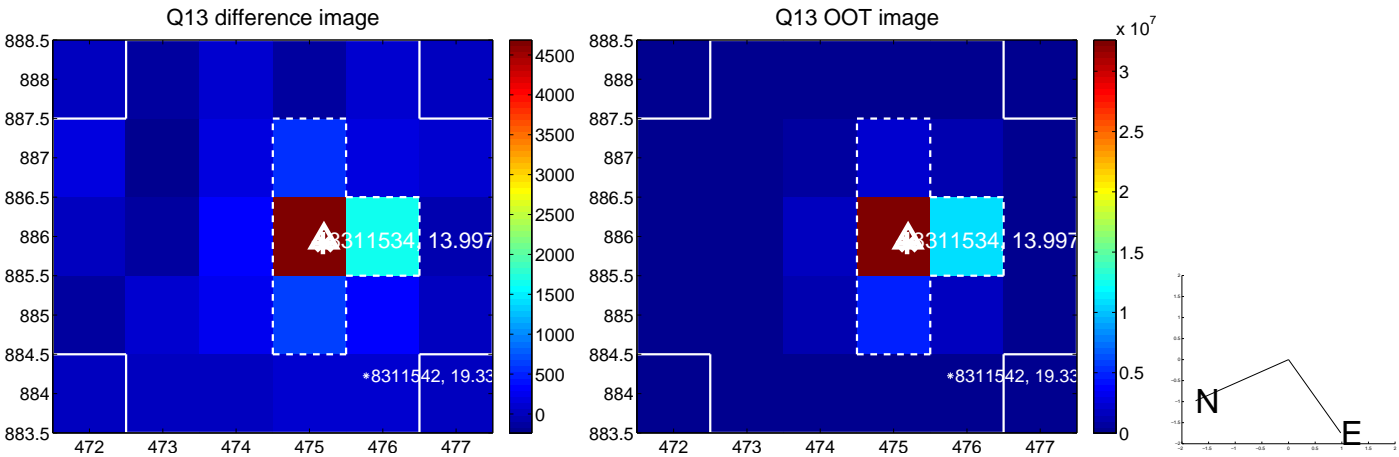
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



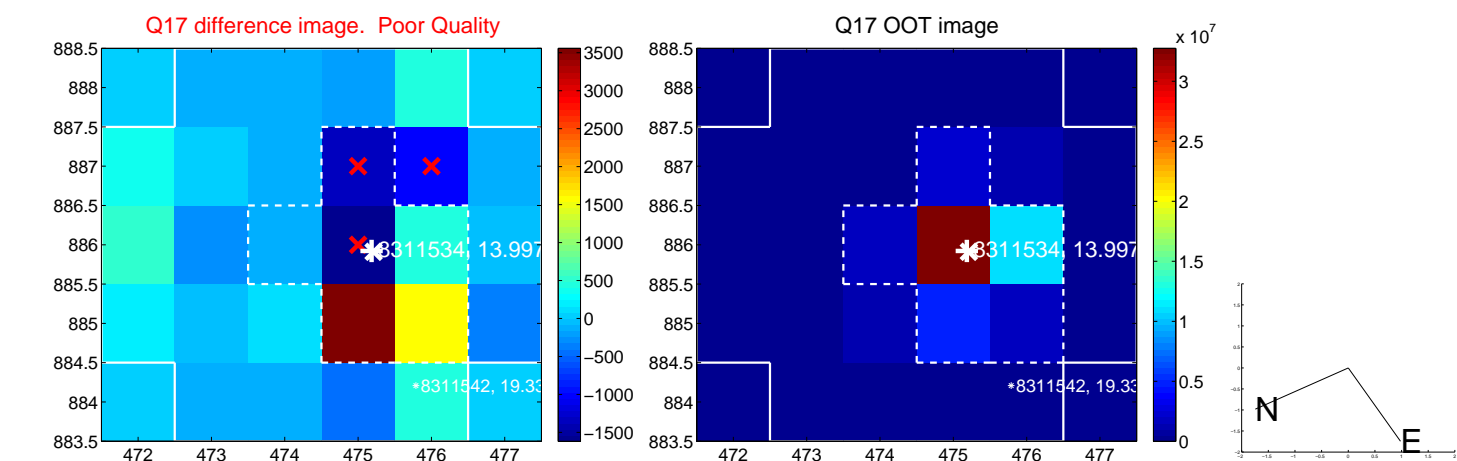
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



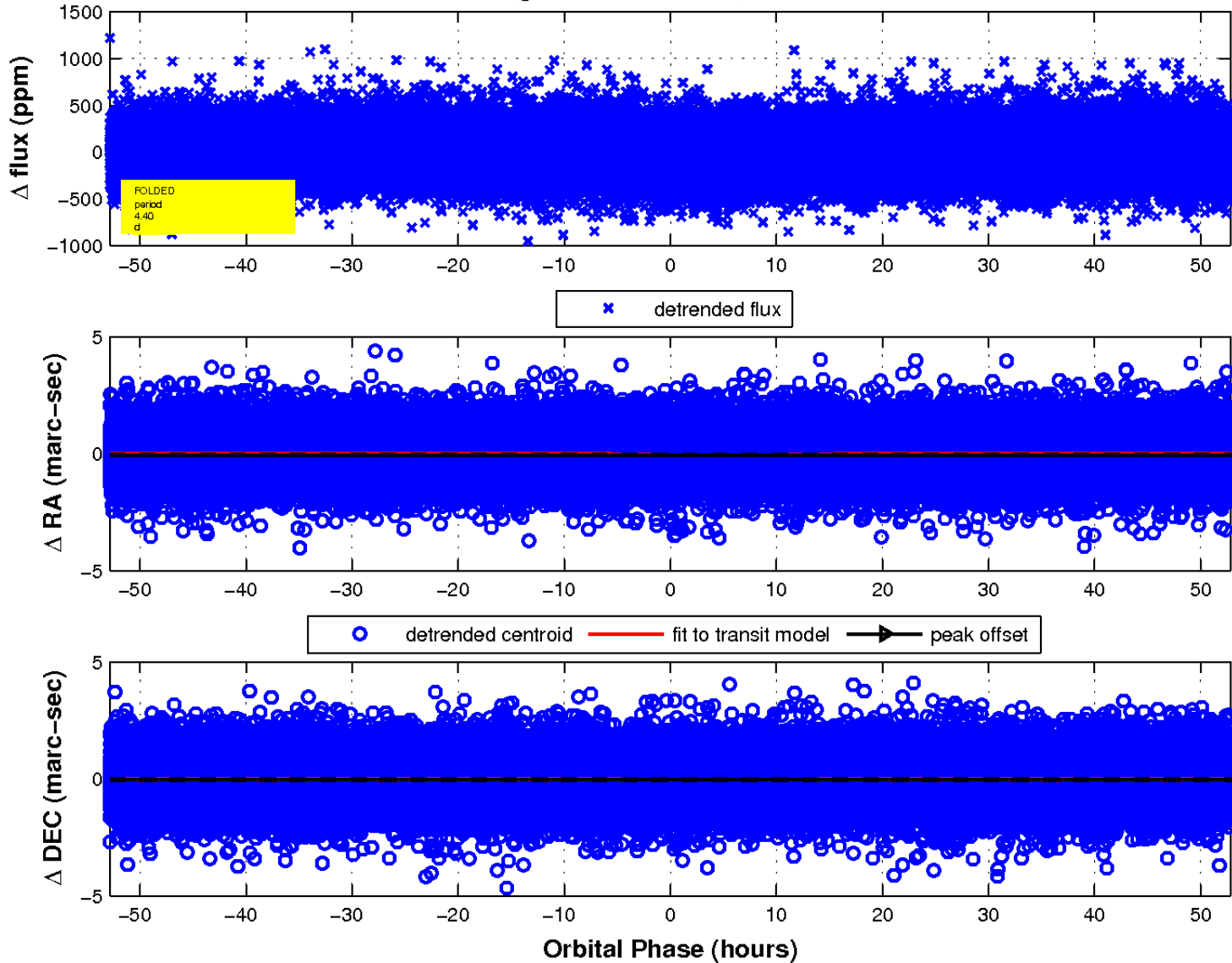
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

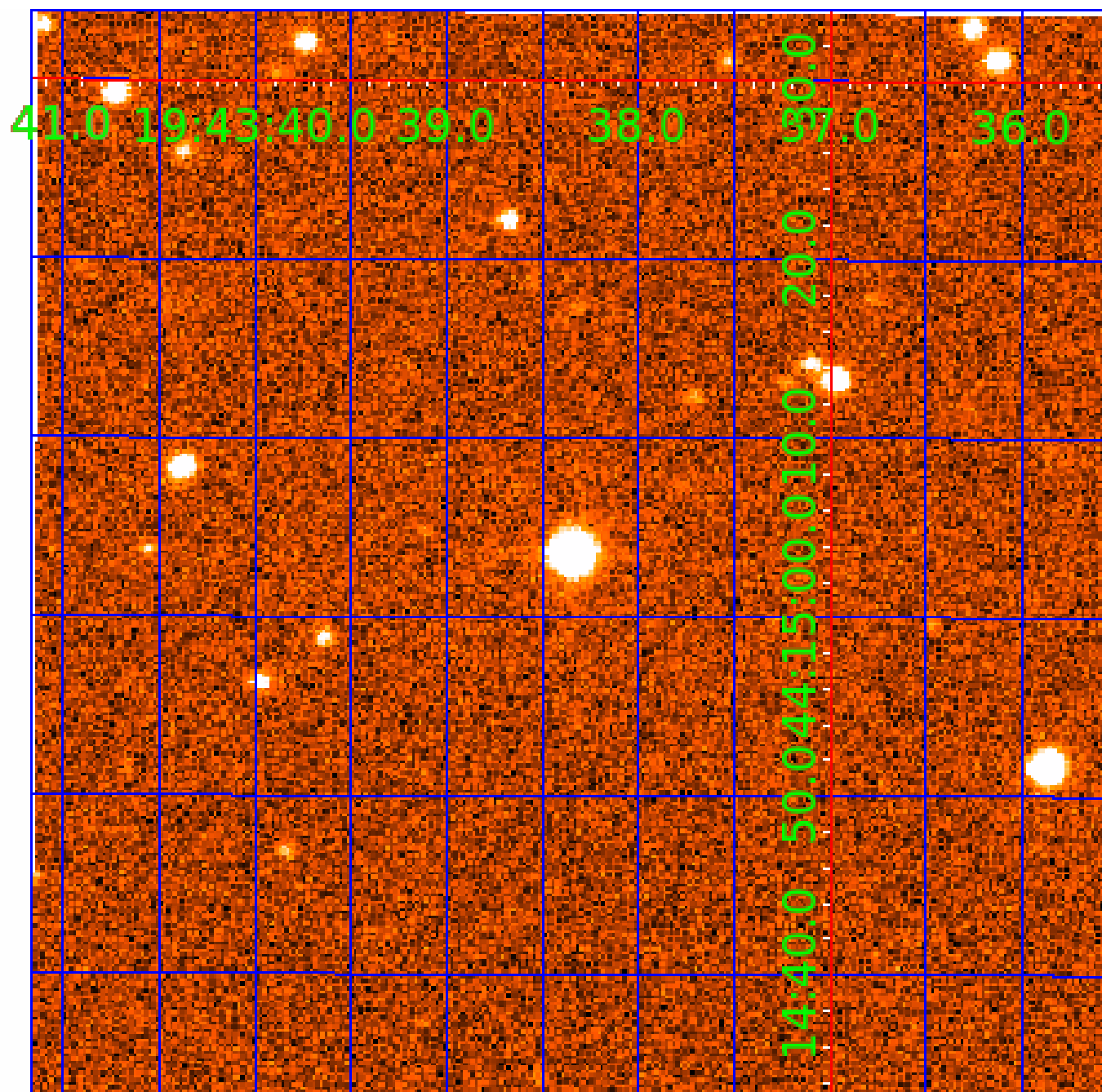


fluxWeightedCentroids, Planet 1 of 2



UKIRT Image

Declination



KIC 008311534

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})
008311534-01	OBS	No	4.402708	135.645384	119.8	15.000	9.0	-1.0	1.10	6434	1.21	617.14
008311534-02	OBS	No	4.403545	133.585374	24.4	25.674	9.1	8.1	1.10	6434	0.55	616.98

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008311534-01	OBS	FP	0.00	1	0	0	0	LPP_DV—CENT_NOFITS
008311534-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—SAME_NTL_PERIOD

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

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

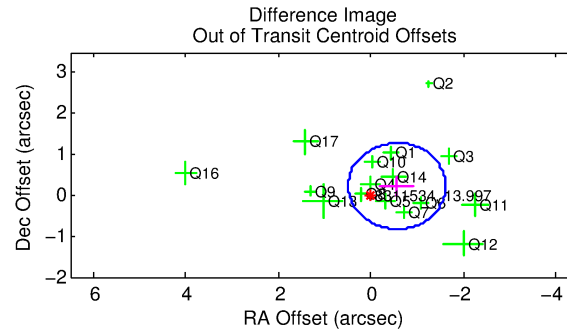
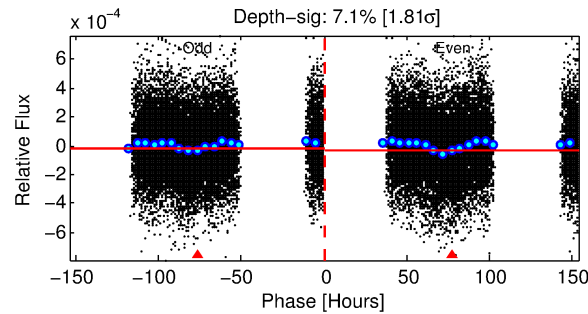
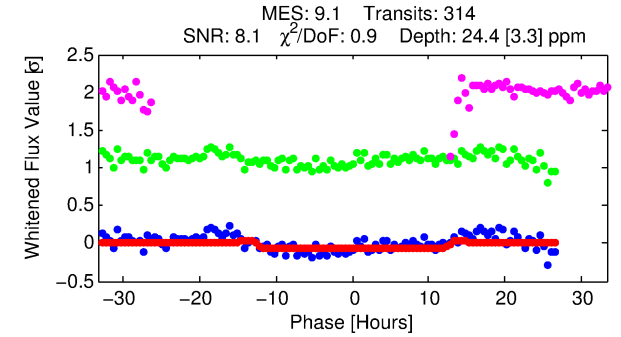
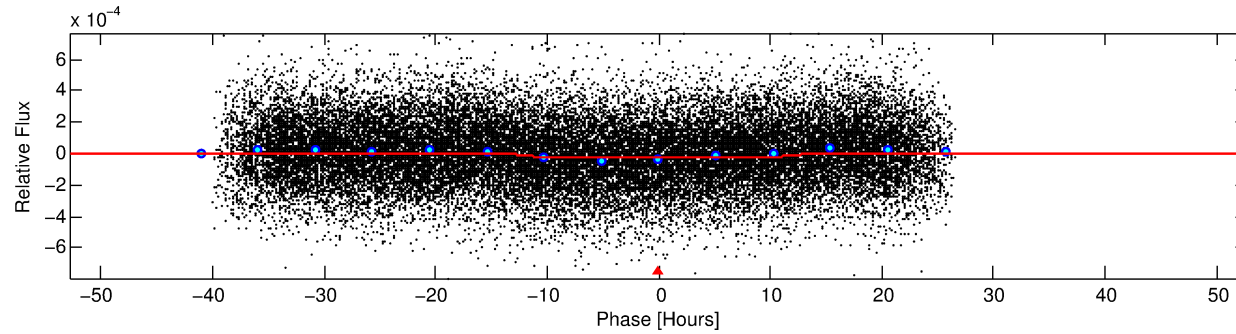
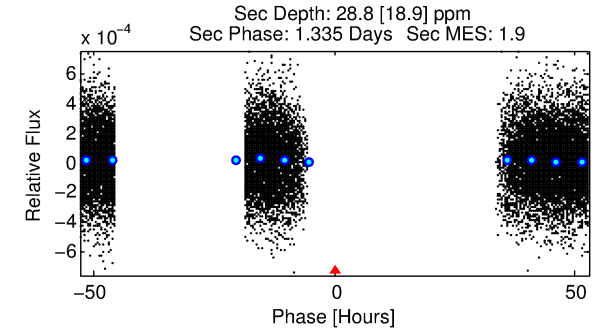
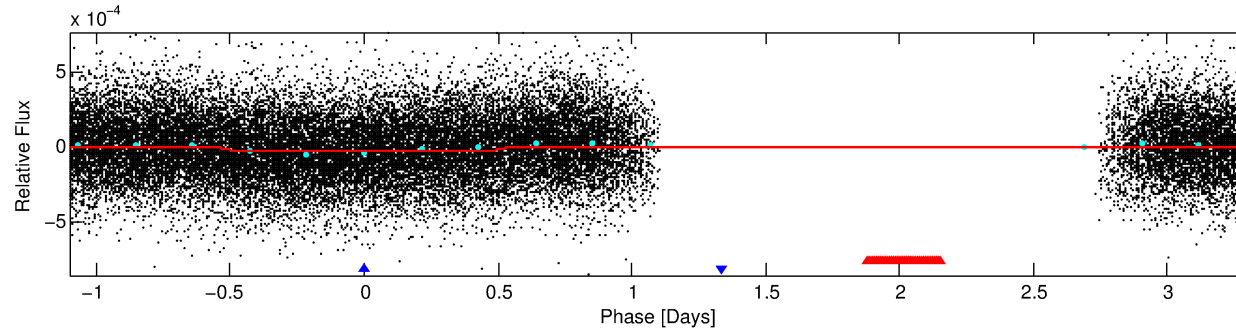
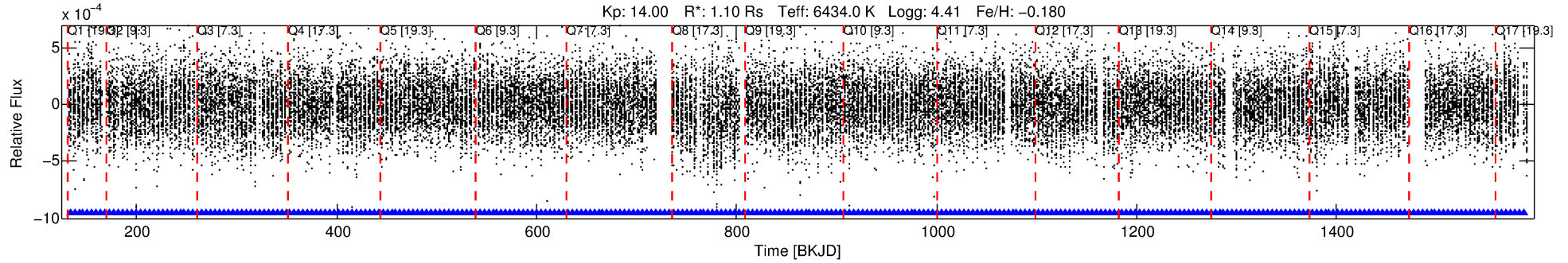
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008311534-02

No Significant Match Found

DV One-Page Summary

KIC: 8311534 Candidate: 2 of 2 Period: 4.404 d



DV Fit Results:

Period = 4.40355 [0.00010] d
Epoch = 133.5854 [0.0166] BKJD
Rp/R* = 0.0046 [0.0035]
a/R* = 1.41 [2.83]
b = 0.35 [10.12]
Seff = 616.98 [232.51]
Teq = 1271 [120] K
Rp = 0.55 [0.45] Re
a = 0.0549 [0.0135] AU
Ag = 156.46 [266.20] [0.58σ]
Teffp = 6949 [2897] K [1.96σ]

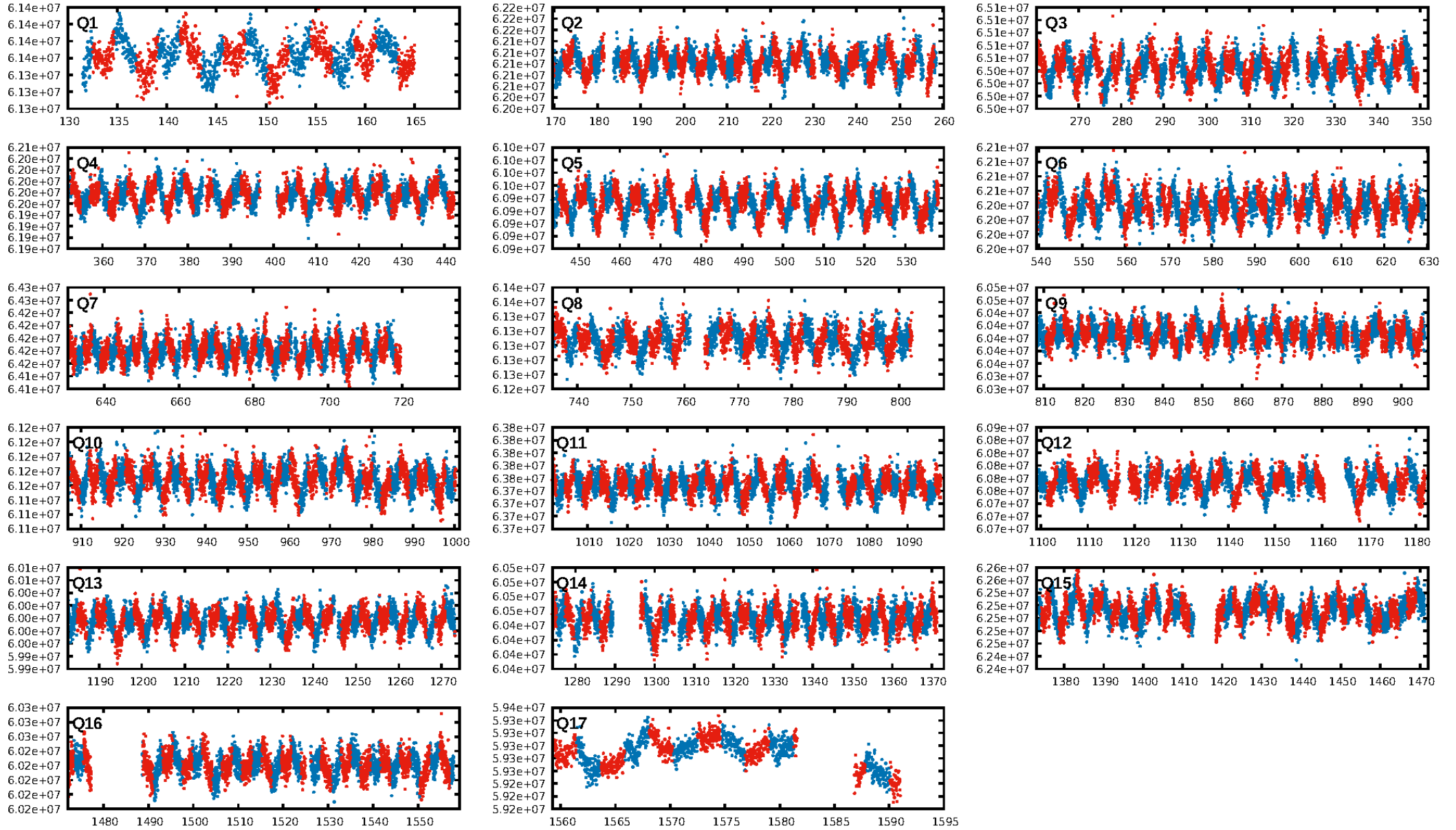
DV Diagnostic Results:

ShortPeriod-sig: 0.1% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [299/299]
GhostDiagnostic-chr: 4.879
Centroid-sig: 68.8%
Centroid-so: 0.488 arcsec [0.47σ]
OotOffset-rm: 0.606 arcsec [1.73σ]
KicOffset-rm: 0.504 arcsec [1.63σ]
OotOffset-st: 4/3/4/5 [16]
KicOffset-st: 4/3/4/5 [16]
DiffImageQuality-fgm: 0.94 [15/16]
DiffImageOverlap-fno: 0.00 [0/17]

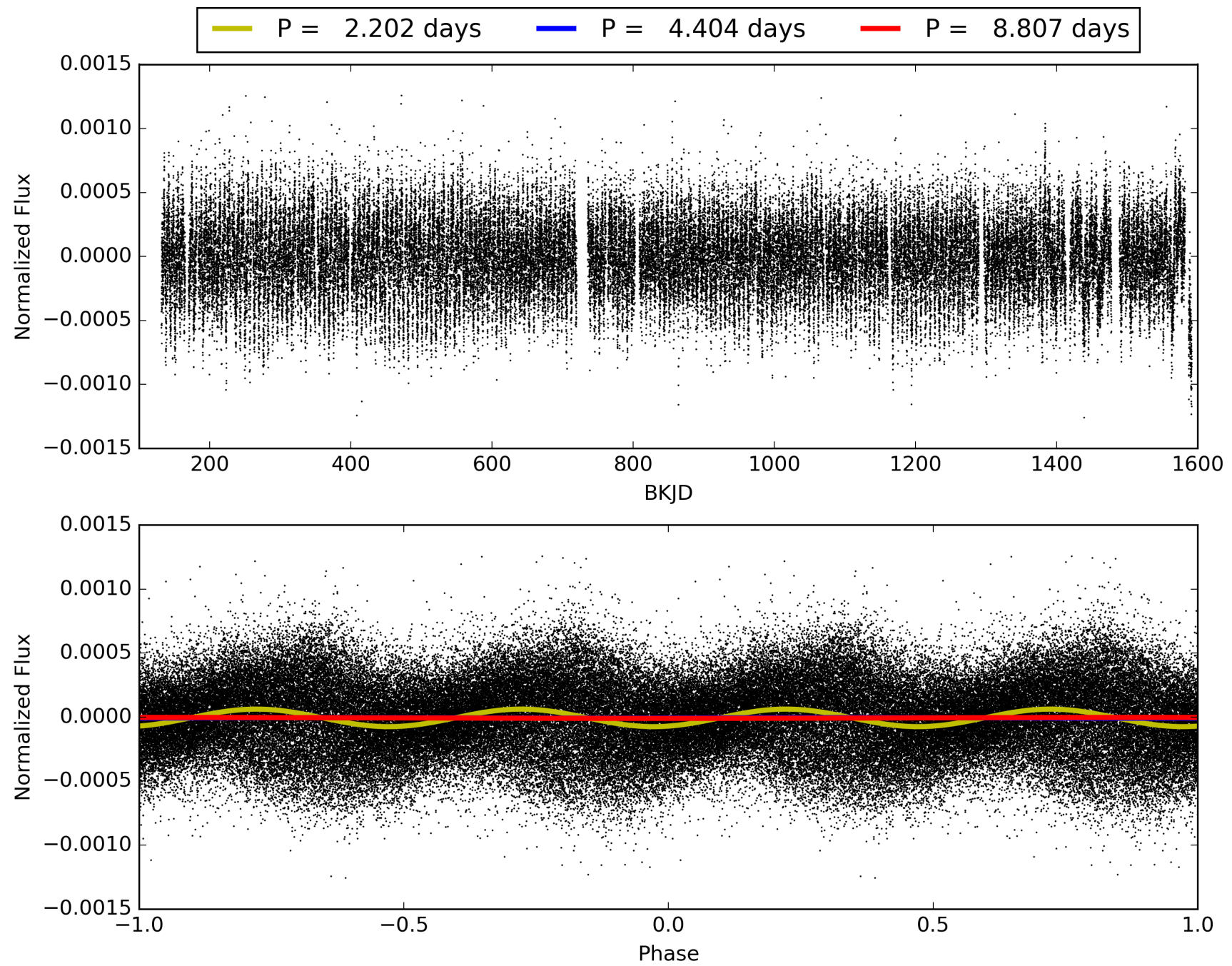
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 17:21:29 Z

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

TCE 008311534-02, PDC Light Curves

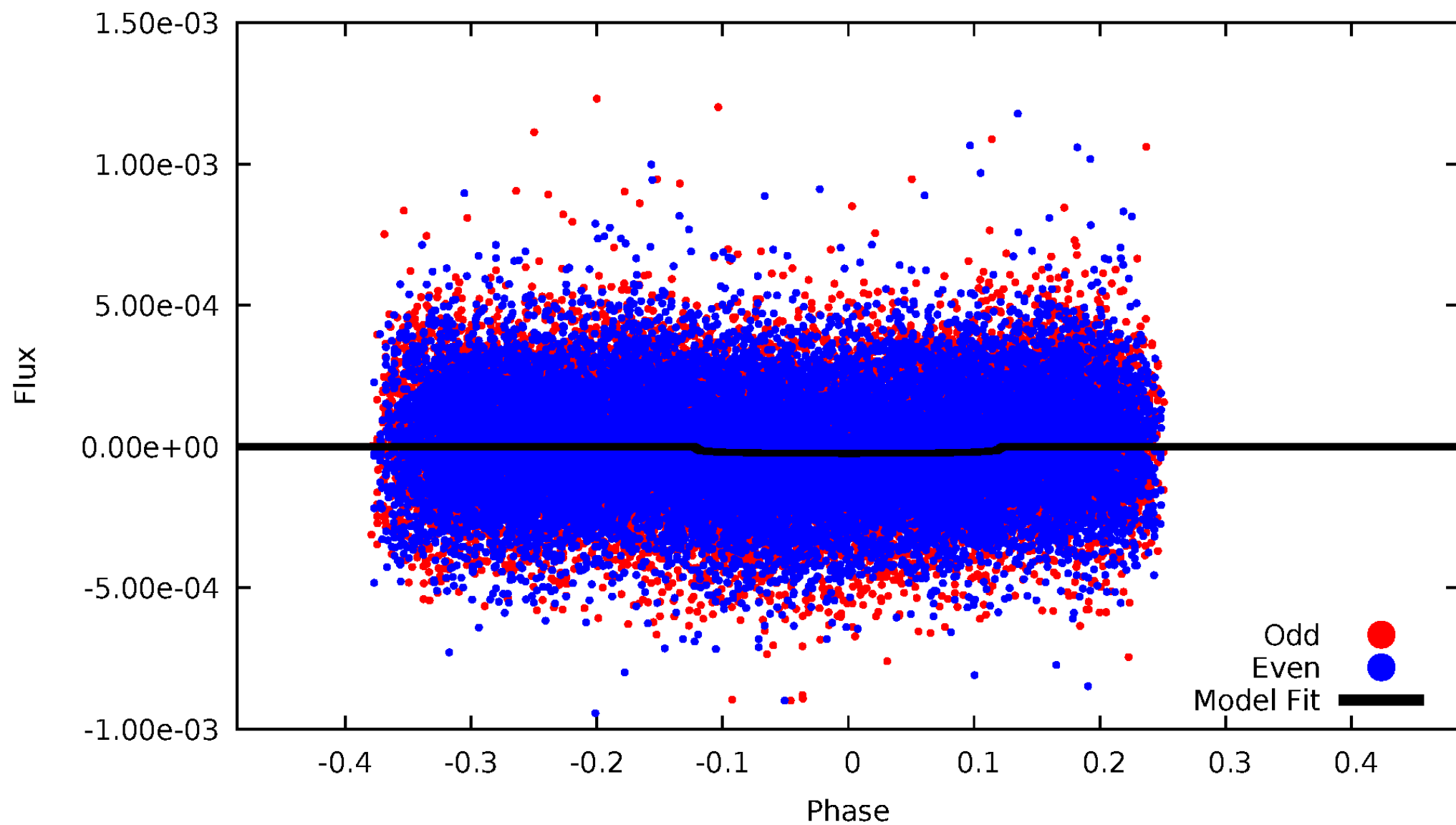


TCE 008311534-02



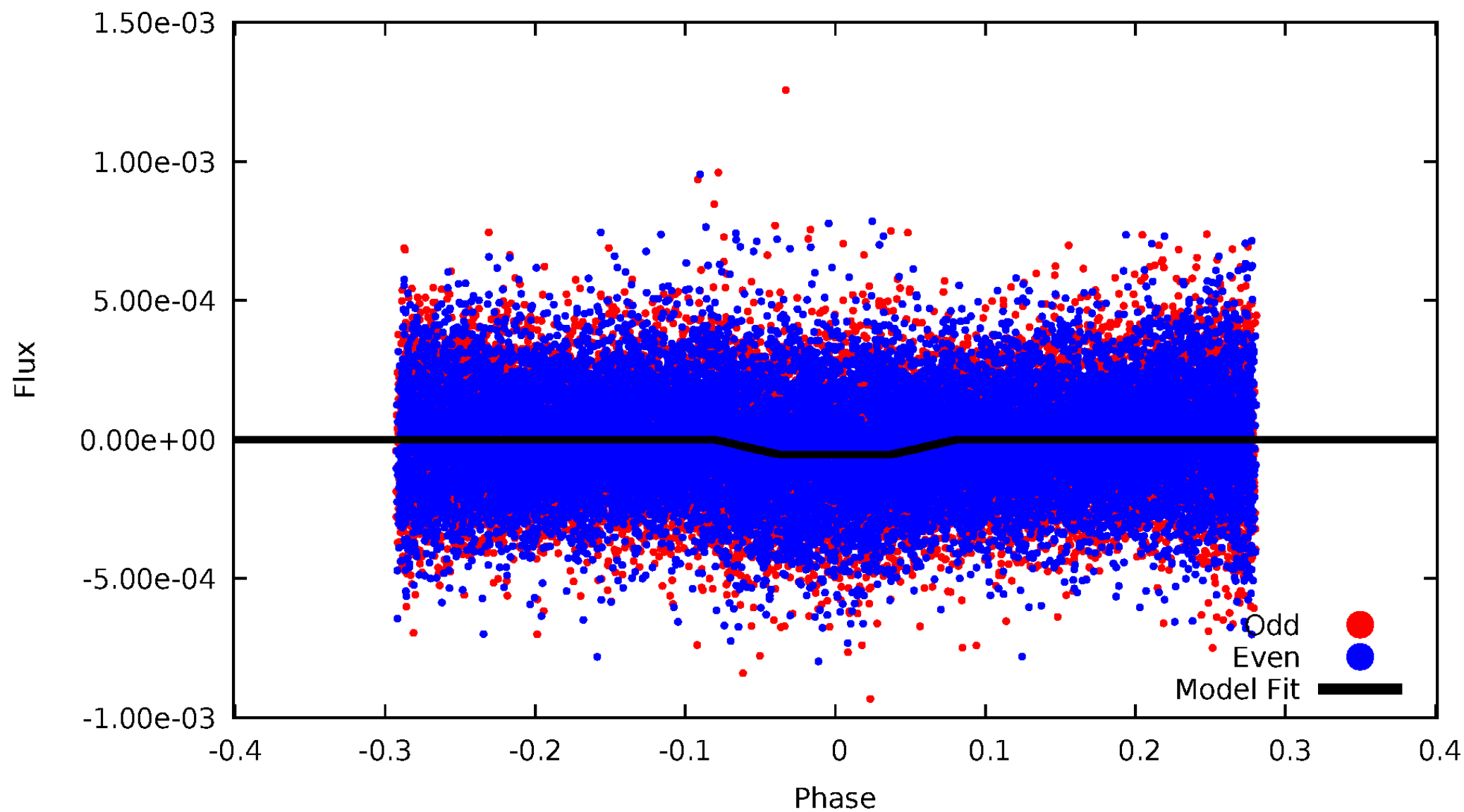
DV Odd/Even

TCE 008311534-02



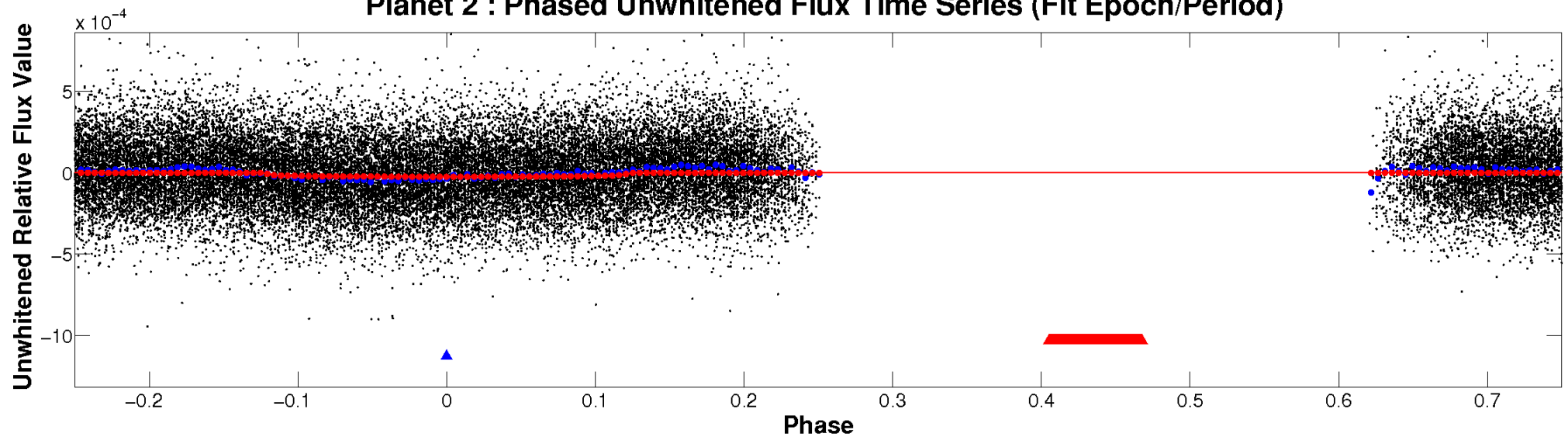
ALT Odd/Even

TCE 008311534-02

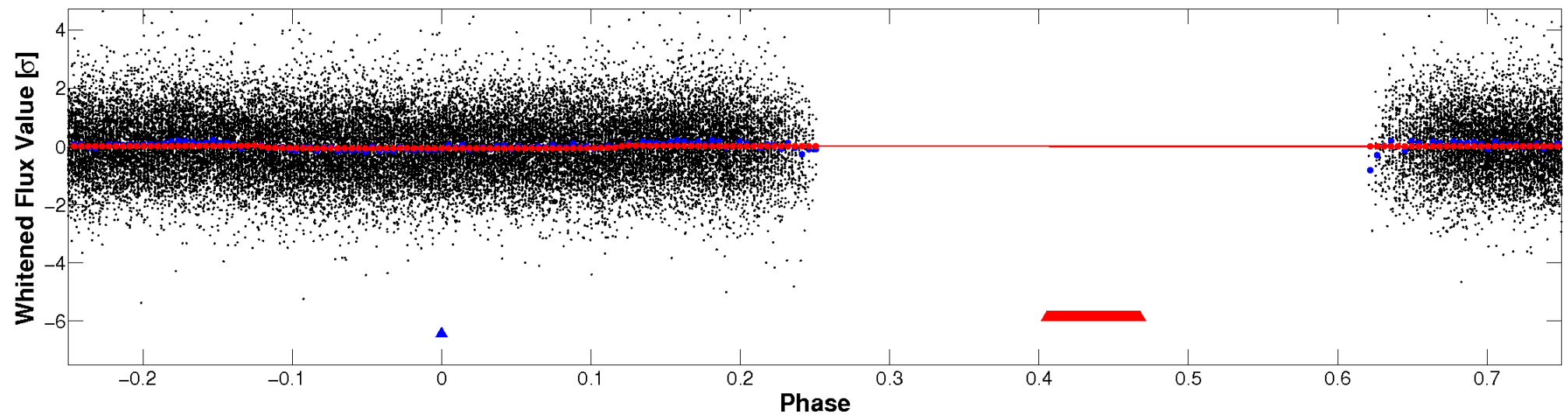


Non-Whitened Vs. Whitened Light Curve

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

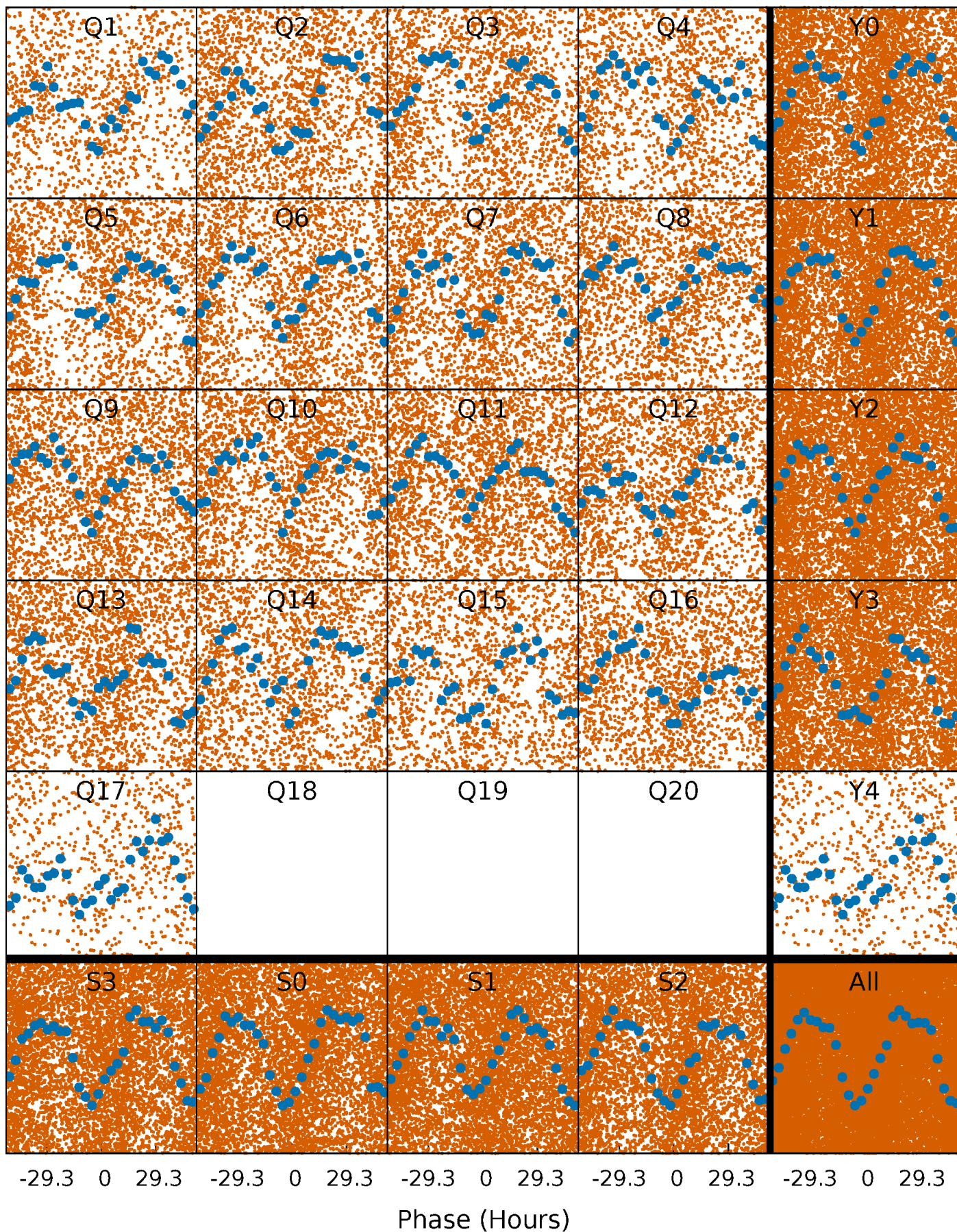


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



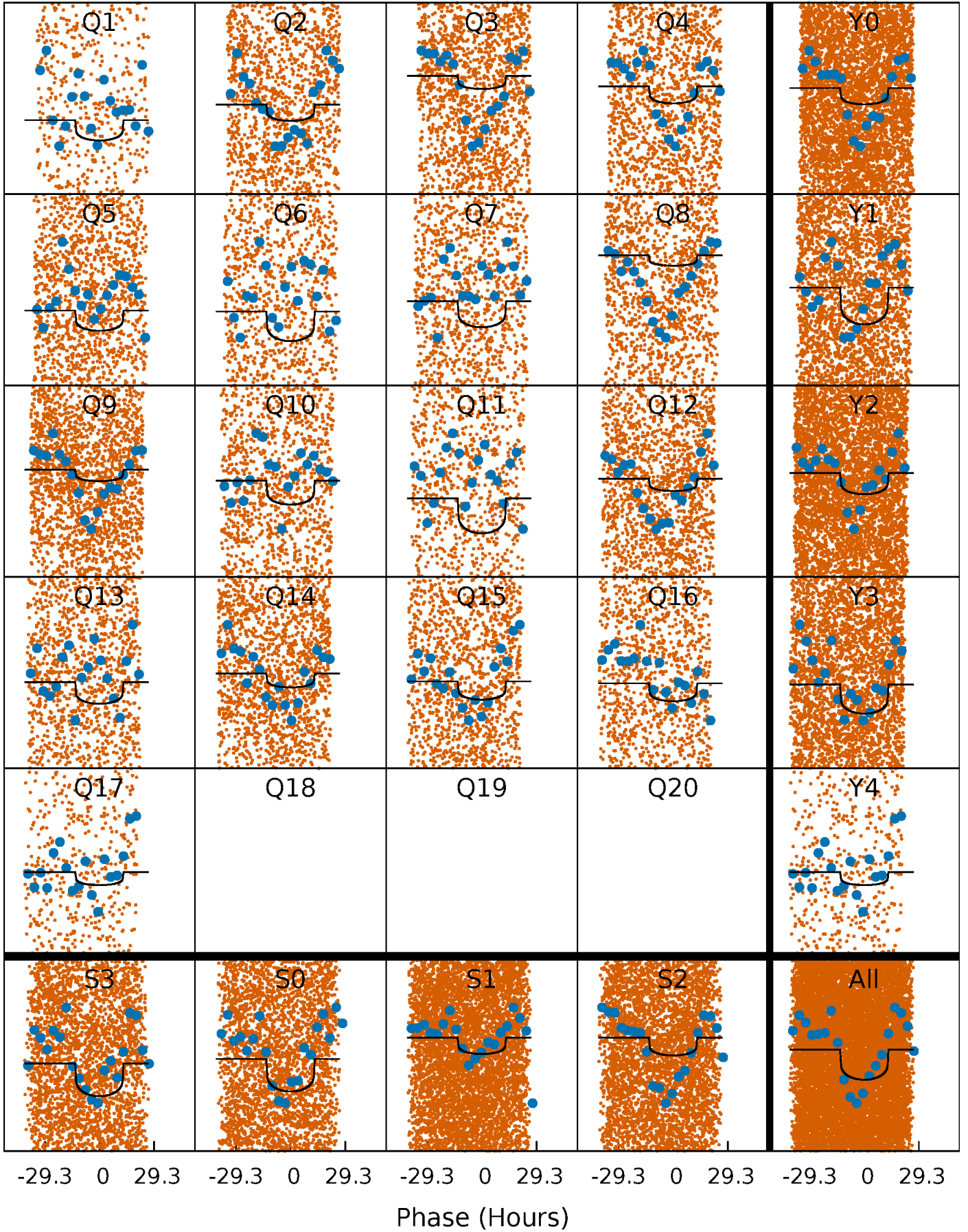
PDC Quarter-Phased Transit Curves

TCE 008311534-02 P= 4.403545 Days $T_0=133.585374$ (BKJD)



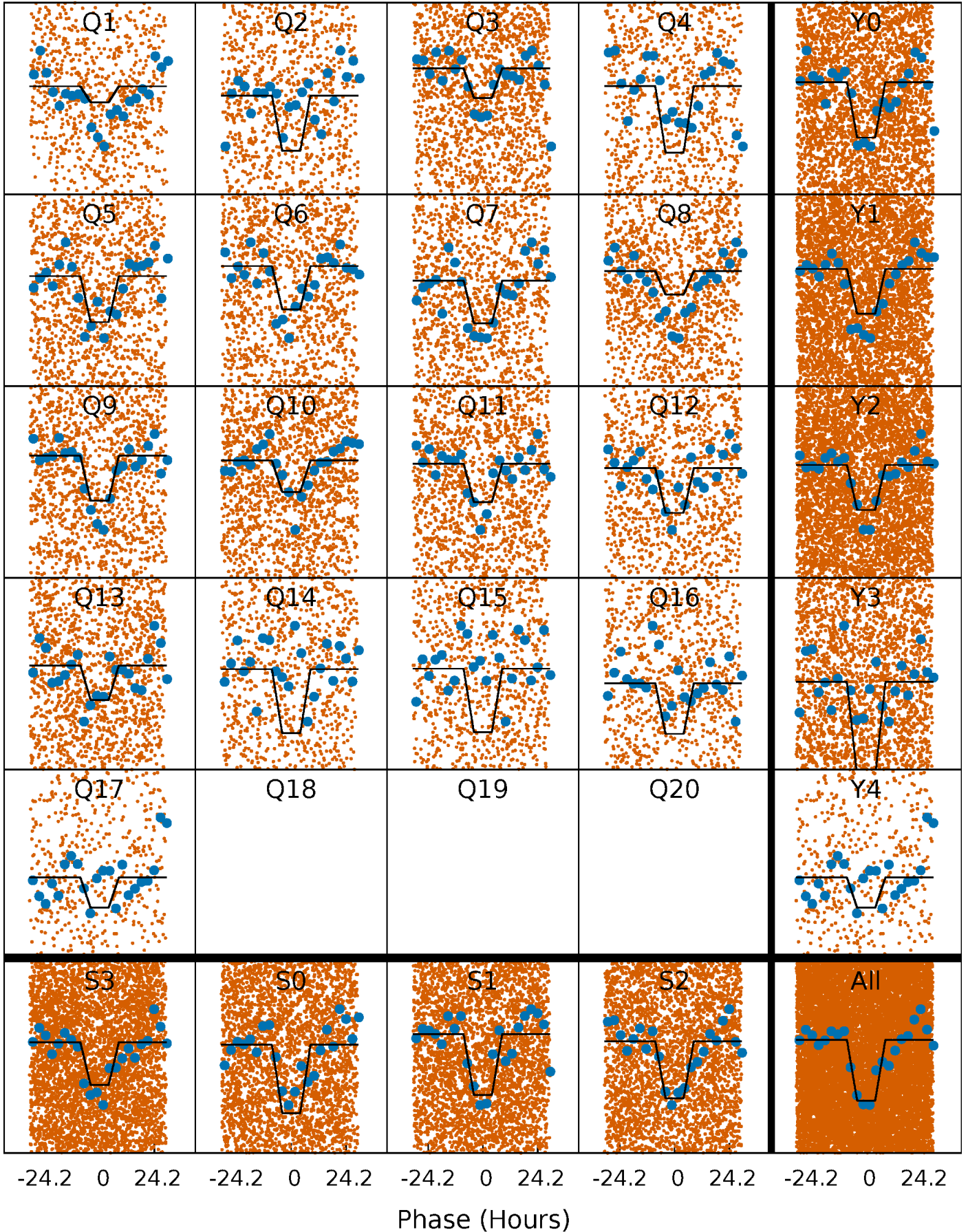
DV Quarter-Phased Transit Curves

TCE 008311534-02 P= 4.403545 Days $T_0=133.585374$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

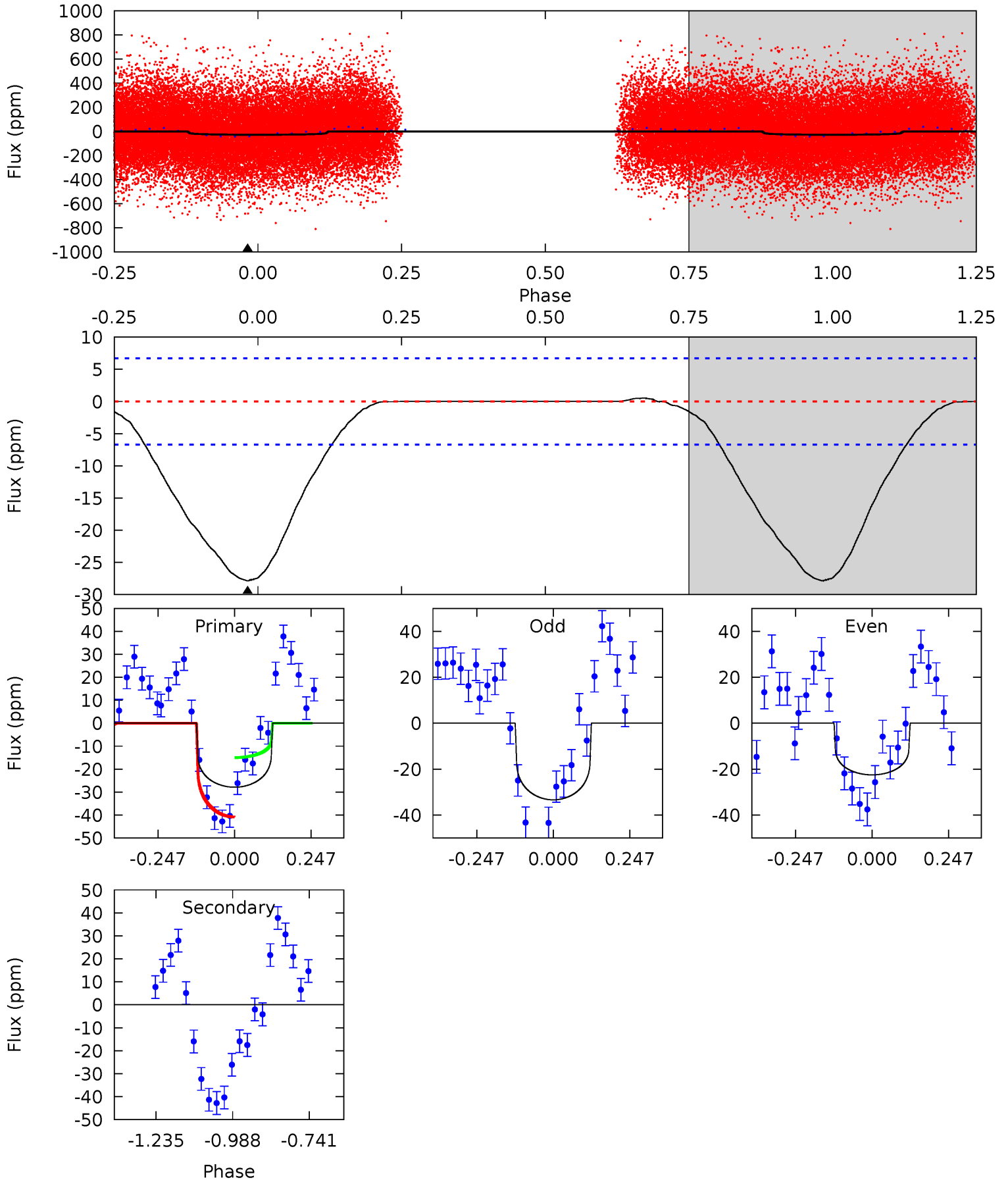
TCE 008311534-02 P= 4.402768 Days $T_0=133.460859$ (BKJD)



DV Model-Shift Uniqueness Test

008311534-02, P = 4.403545 Days, E = 129.181829 Days

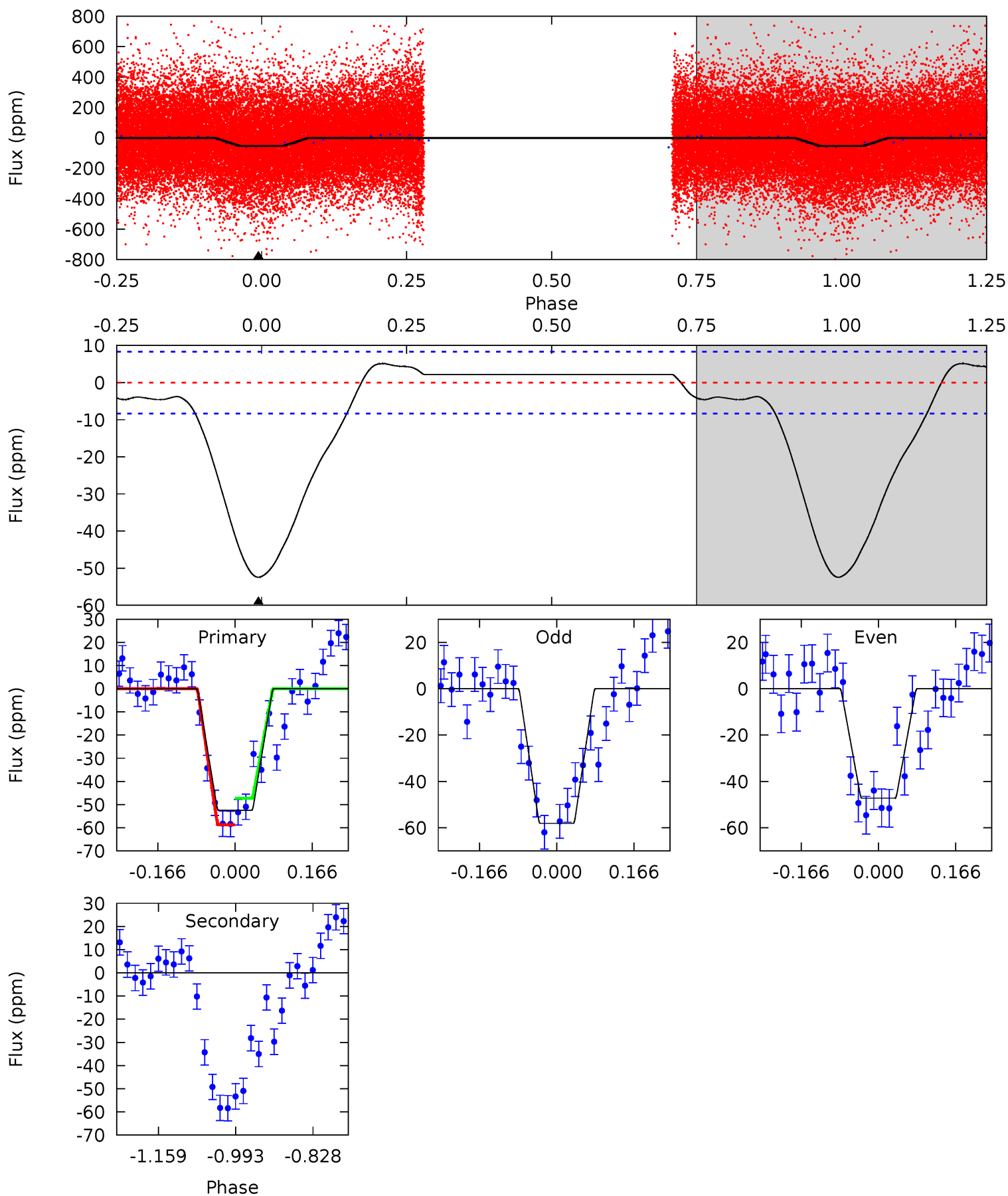
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.2	0	0	0	4.37	1.16	0.27	18.2	18.2	0	0	3.53	1.12	0.02	8.24



Alt Model-Shift Uniqueness Test

008311534-02, P = 4.402768 Days, E = 129.058091 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
28.0	0	0	0	4.46	1.39	2.07	28.0	28.0	0	0	2.90	1.26	0.09	3.11



Stellar Parameters For KIC 008311534

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6434^{+154}_{-193}	$4.411^{+0.065}_{-0.195}$	$-0.180^{+0.250}_{-0.300}$	$1.101^{+0.322}_{-0.138}$	$1.137^{+0.152}_{-0.137}$	$1.202^{+0.394}_{-0.611}$
	+2%/-3%	+1%/-4%	+139%/-167%	+29%/-13%	+13%/-12%	+33%/-51%
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 008311534-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	0 ± 2	$0.64^{+0.46}_{-0.37}$	1805^{+133}_{-84}	-2496^{+6274}_{-1405}	$-0.130^{+8.036}_{-8.875}$
Alt.	0 ± 2	$0.92^{+0.45}_{-0.41}$	1800^{+123}_{-73}	-2303^{+5714}_{-1128}	$0.093^{+4.667}_{-4.453}$

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 $A_{obs} \gg 1.0$

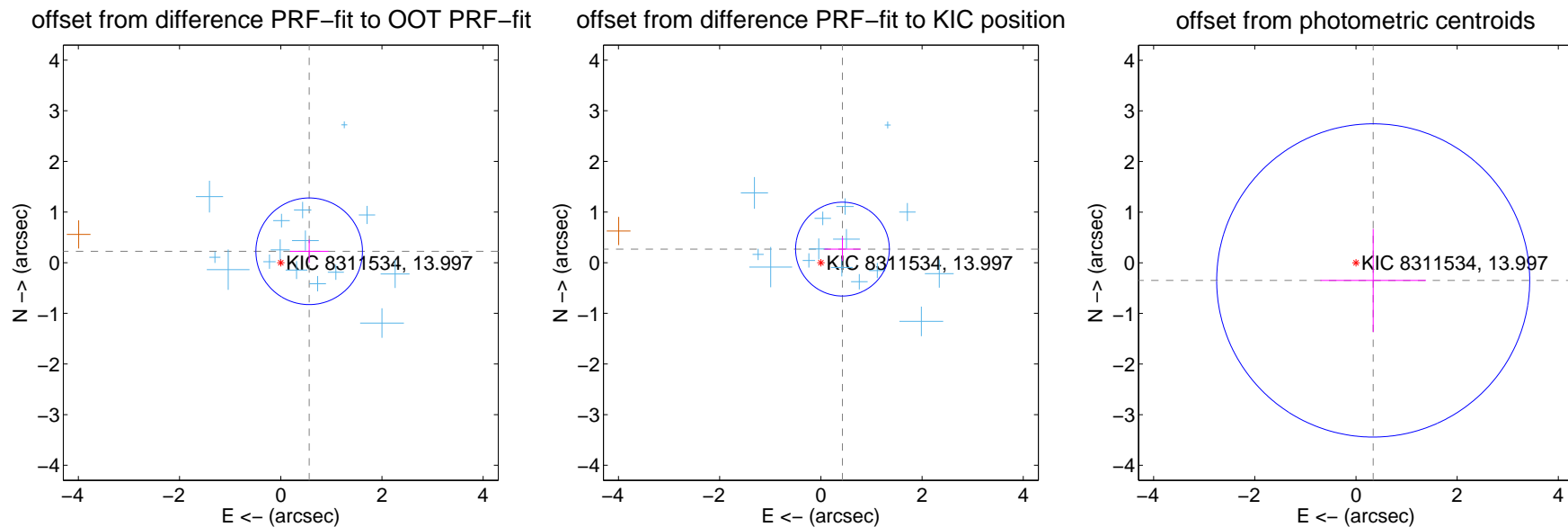
DV Centroid Data

Supplemental centroid analysis for 008311534-02. Kepler magnitude: 14.00. Transit SNR 8.12

There are 15 quarters with good PRF difference image offsets

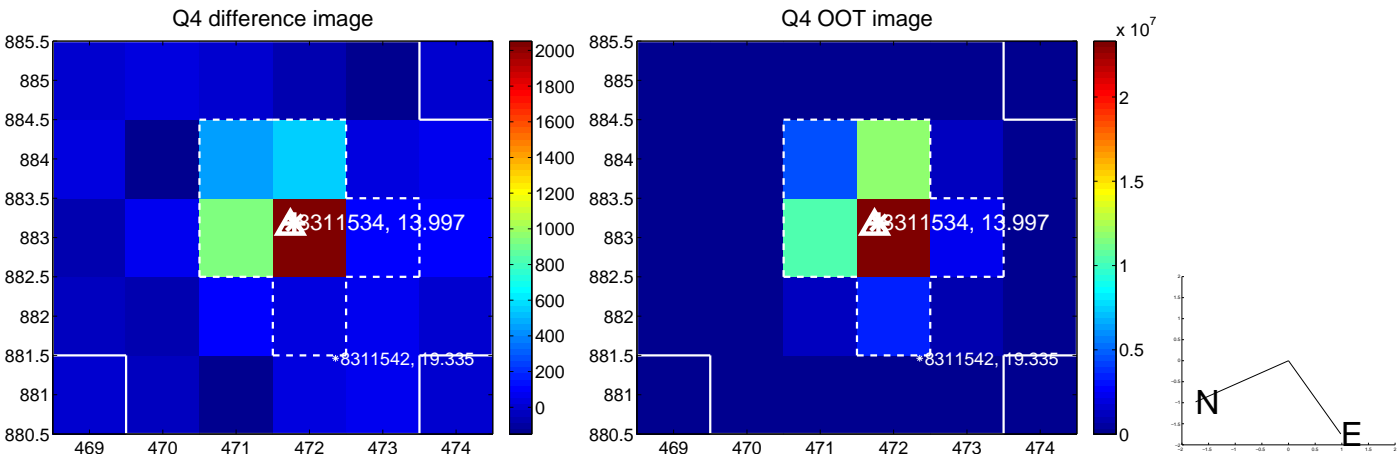
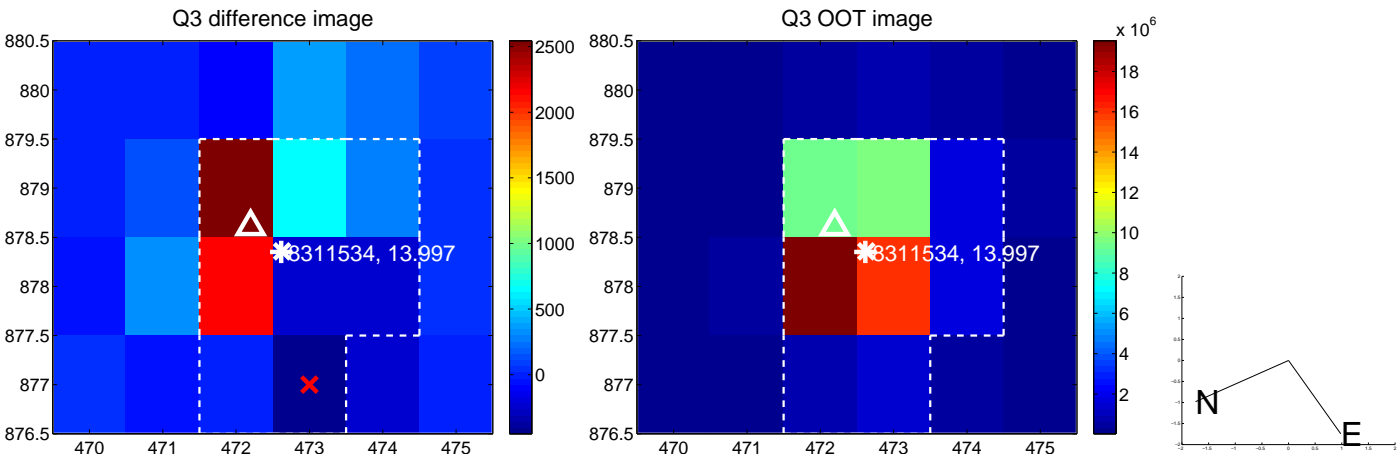
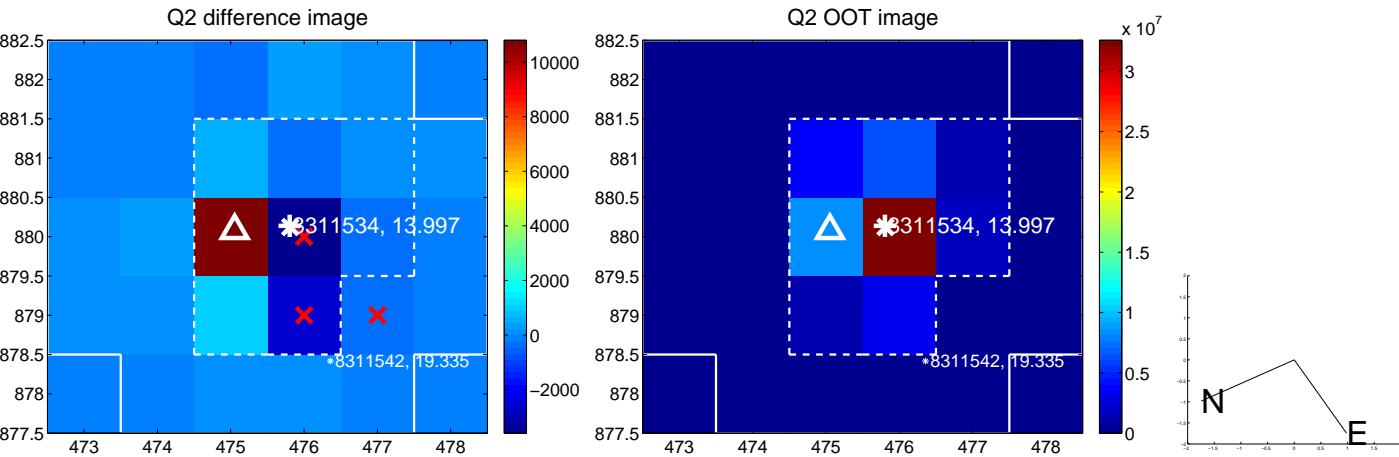
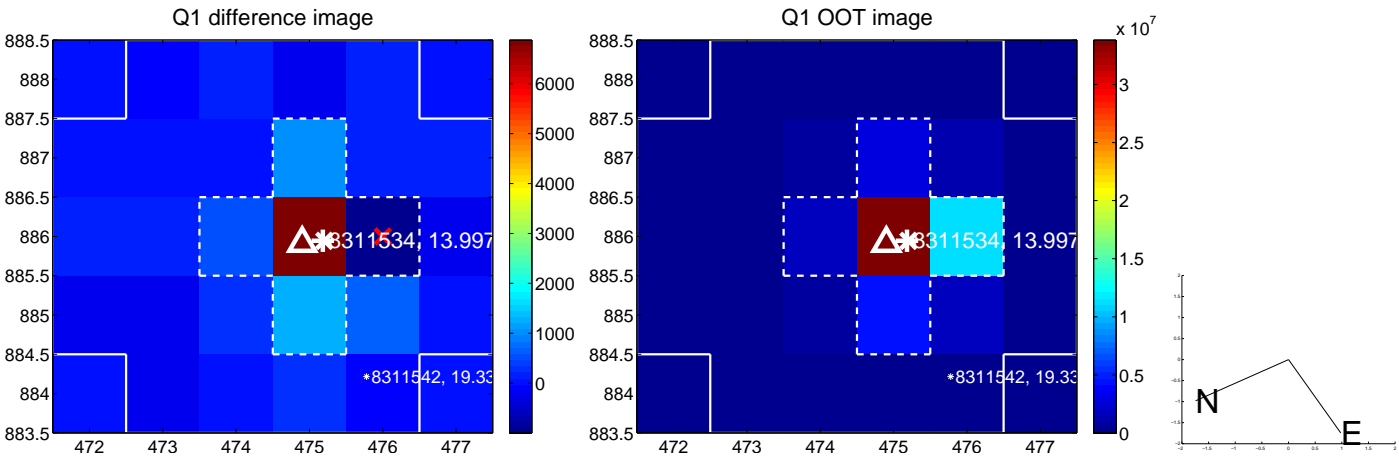
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.606 ± 0.351	1.73	-0.562 ± 0.378	0.225 ± 0.228
PRF-fit source offset from KIC position	0.504 ± 0.309	1.63	-0.427 ± 0.357	0.268 ± 0.235
photometric centroid source offset	0.49 ± 1.03	0.47	-0.34 ± 1.04	-0.35 ± 1.02

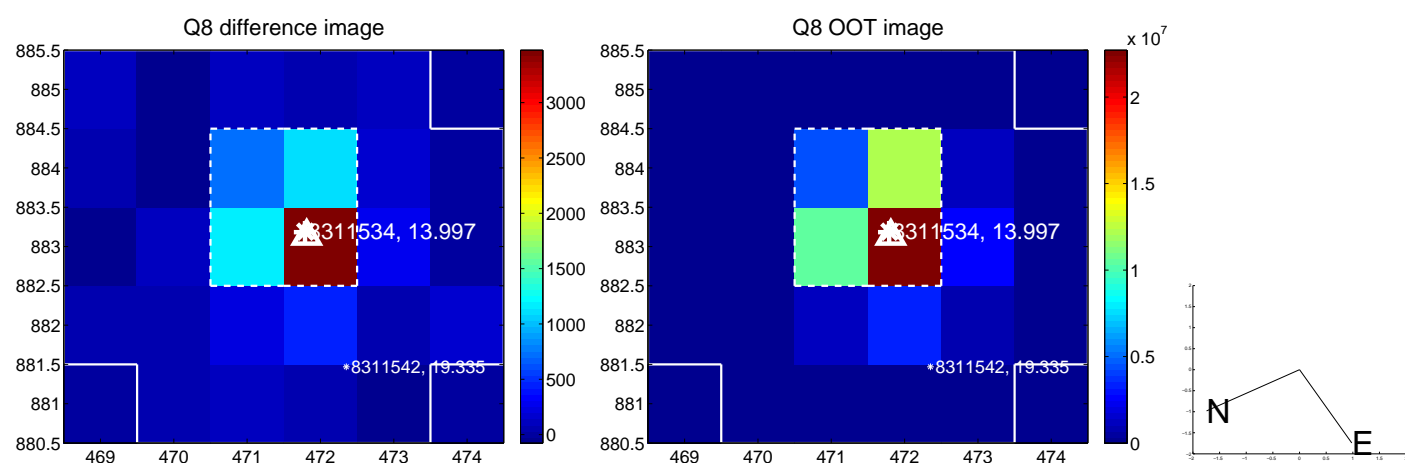
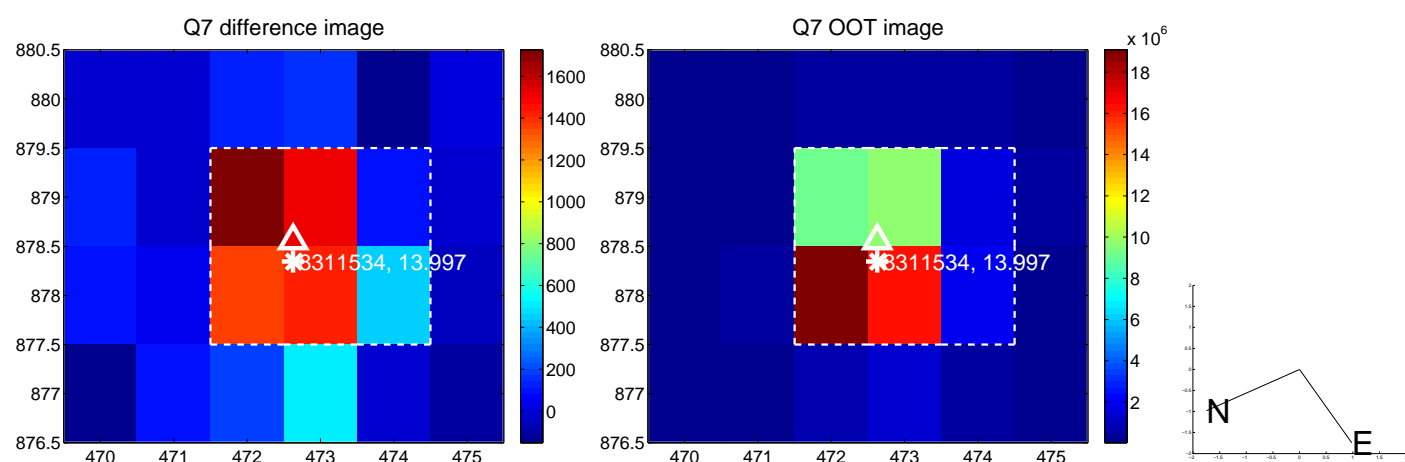
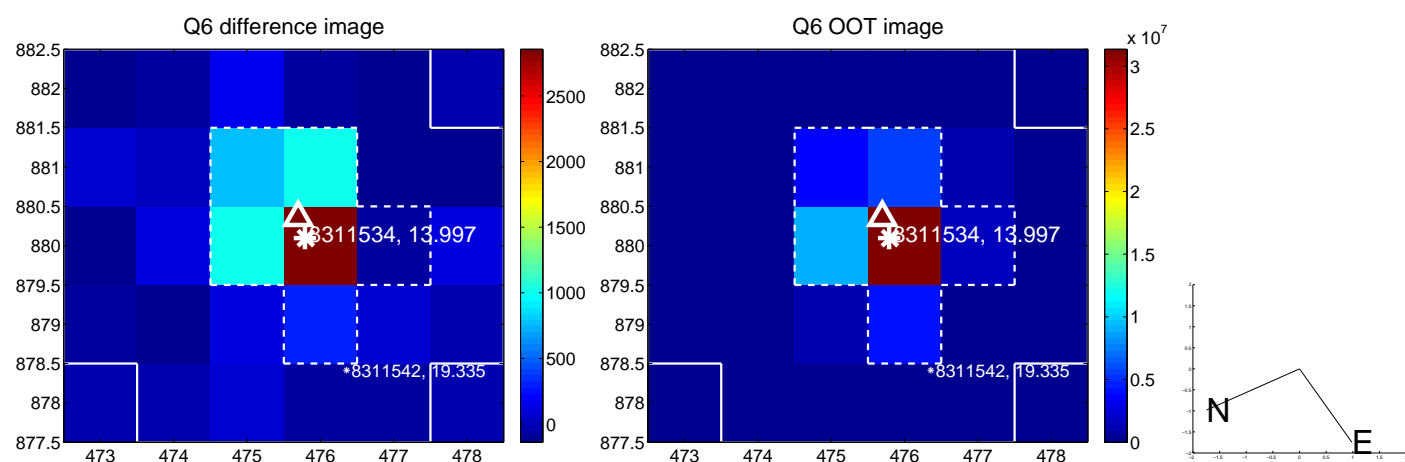
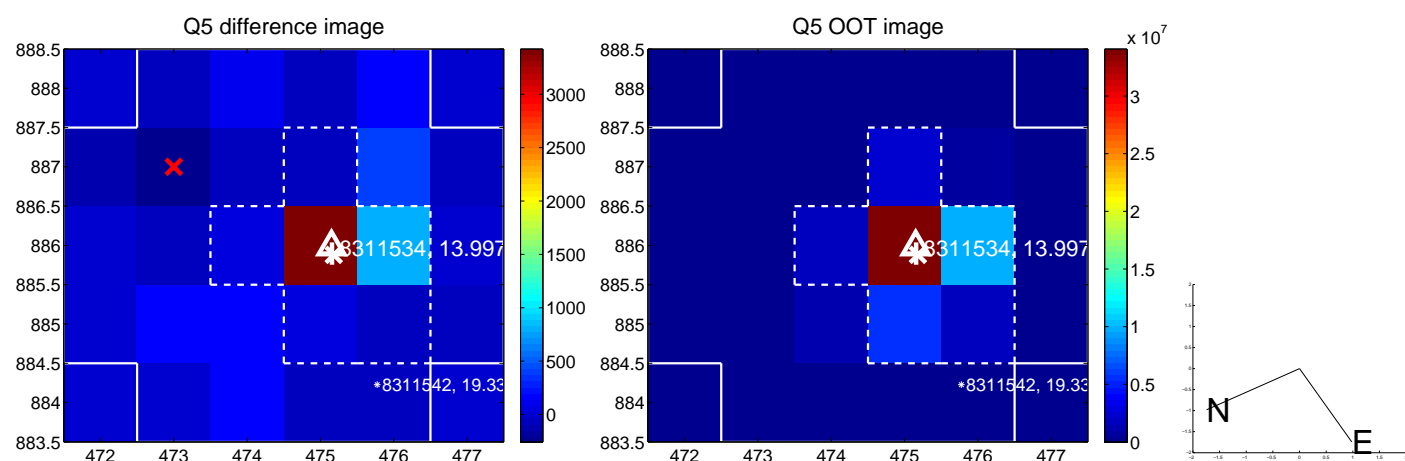


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

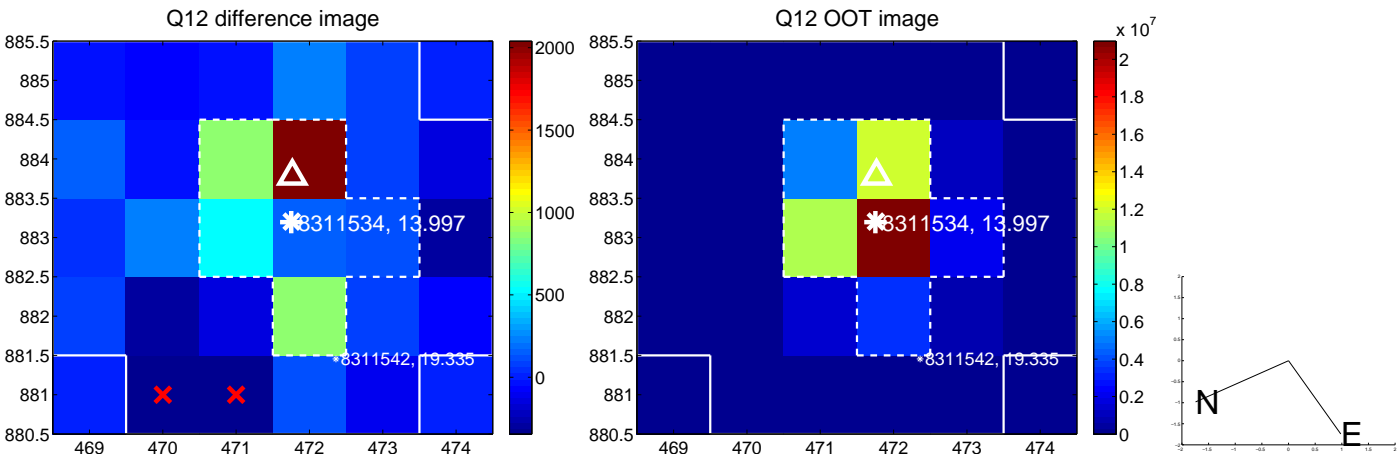
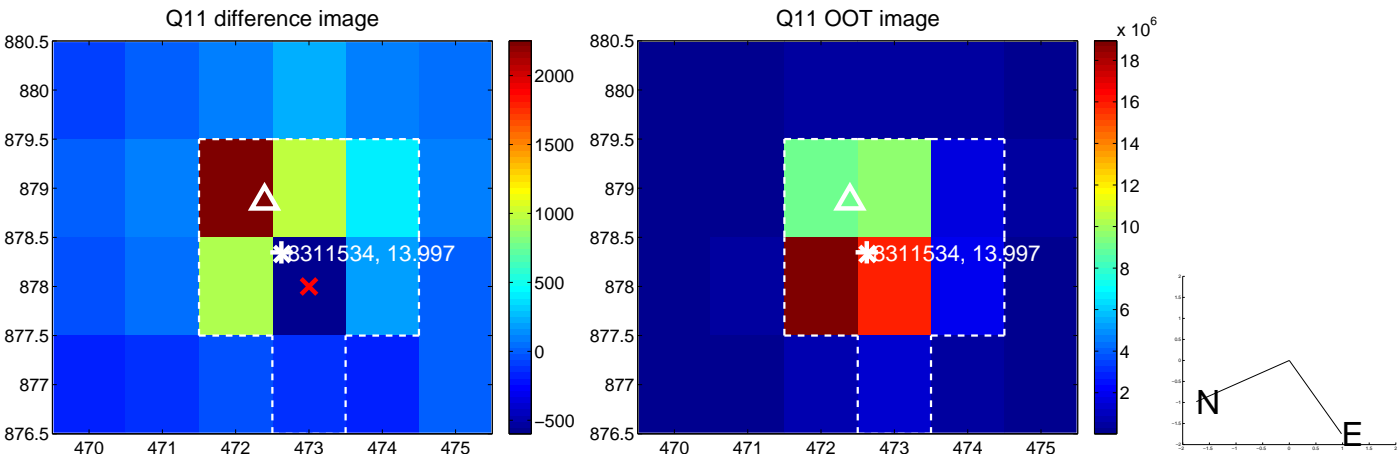
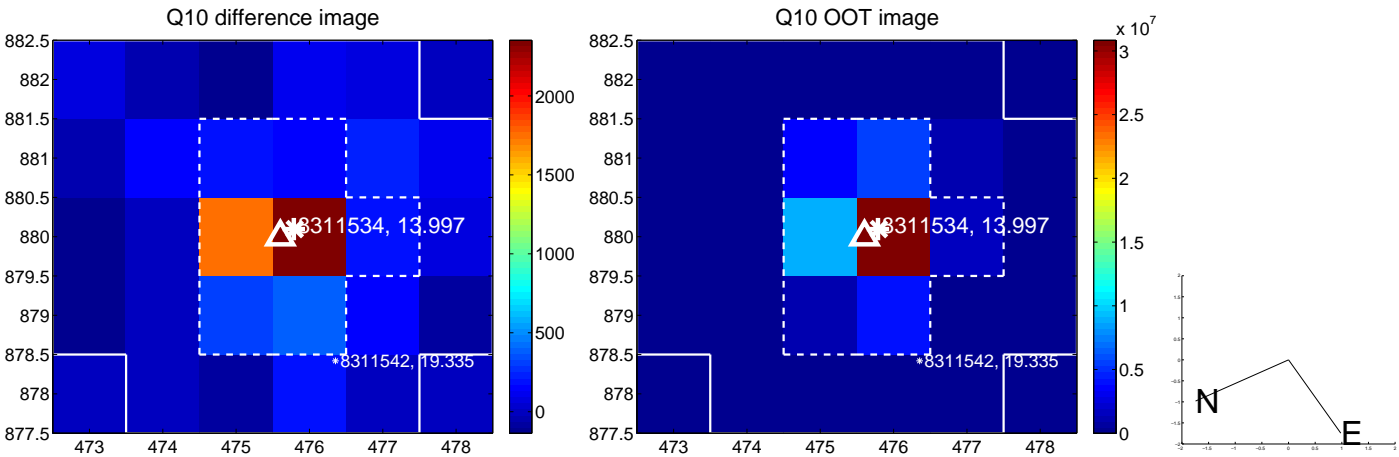
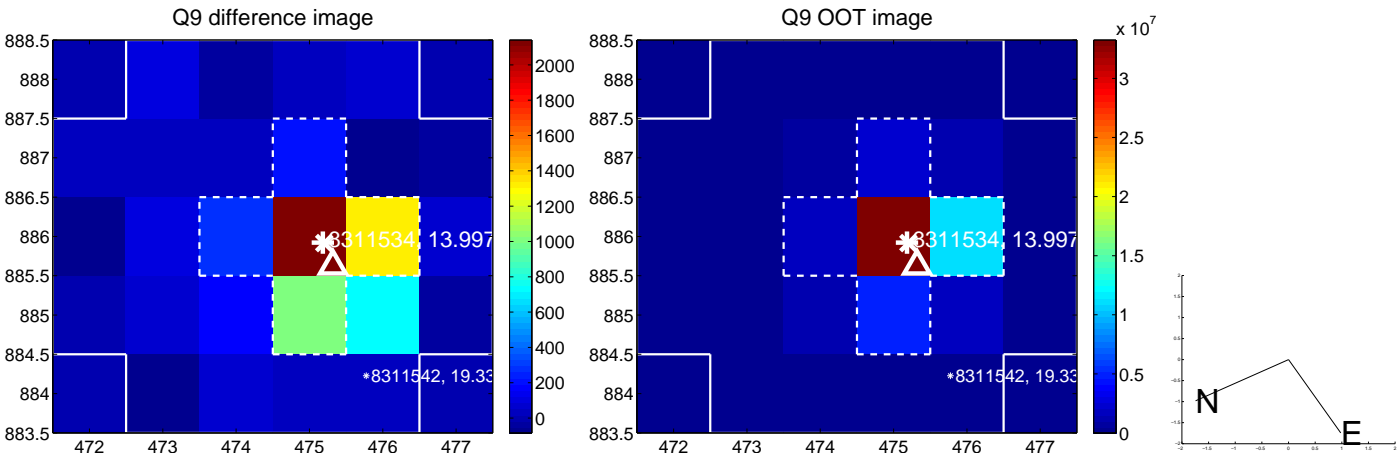
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



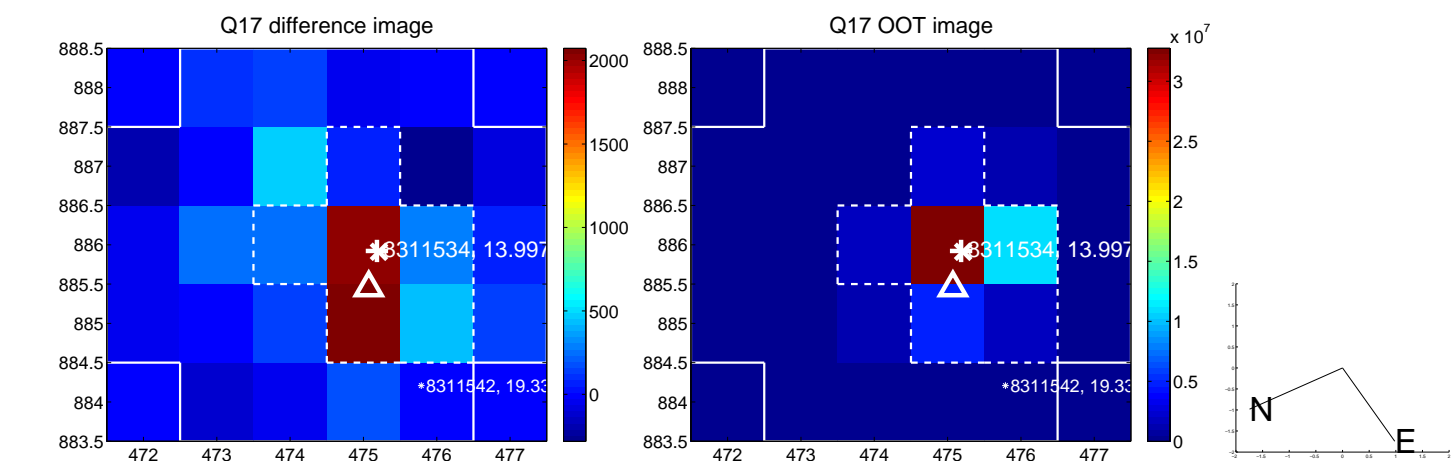
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



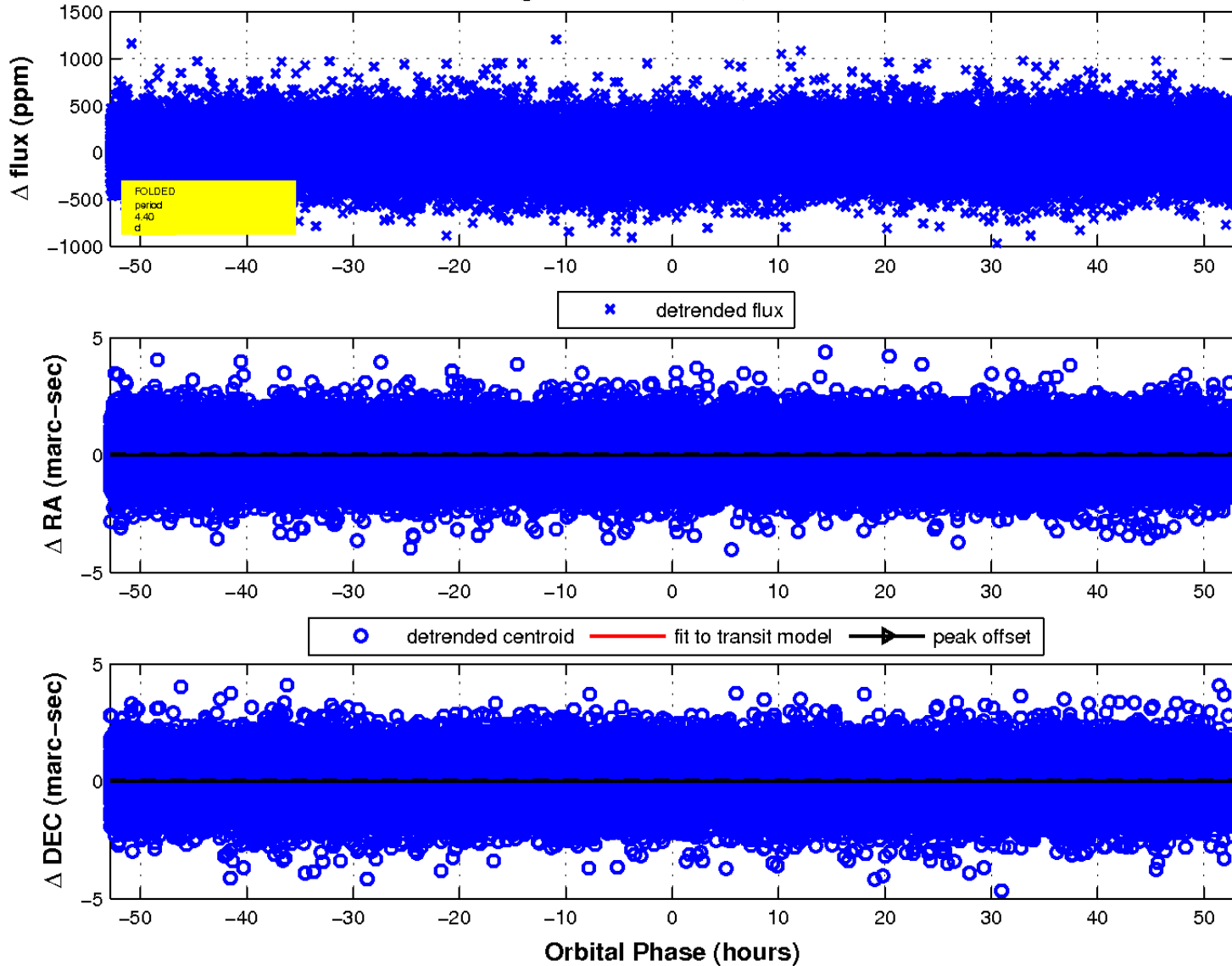
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 2 of 2



UKIRT Image

Declination

