

KIC 008613535

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})
008613535-01	OBS	2263.01	29.968709	147.856477	315.9	6.905	19.8	22.3	1.08	6249	2.13	40.84
008613535-02	OBS	2263.02	9.478527	140.164658	176.2	6.270	20.0	21.8	1.08	6249	1.58	189.53
008613535-03	OBS	No	304.724764	310.492870	389.3	15.931	10.3	9.6	1.08	6249	2.37	1.85
008613535-04	OBS	2263.03	15.593828	140.306631	87.9	8.335	8.4	9.0	1.08	6249	1.15	97.59

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008613535-01	OBS	PC	0.96	0	0	0	0	NO_COMMENT
008613535-02	OBS	PC	1.00	0	0	0	0	NO_COMMENT
008613535-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008613535-04	OBS	PC	0.55	0	0	0	0	CENT_FEW_MEAS

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.

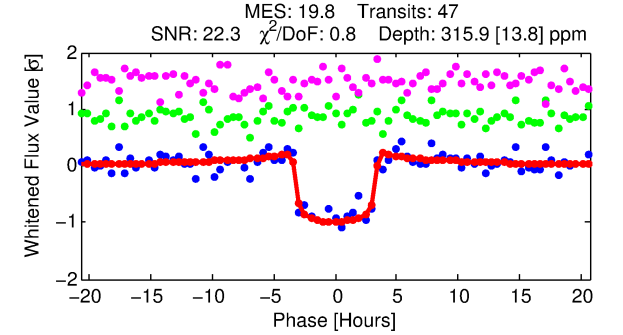
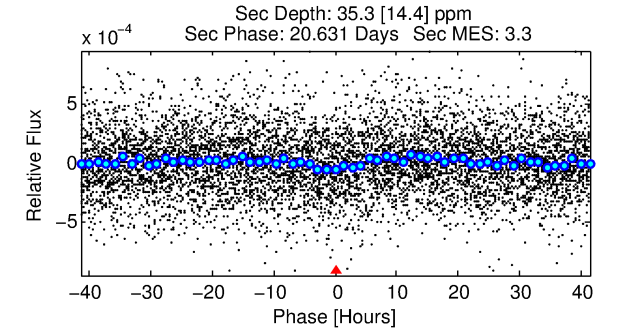
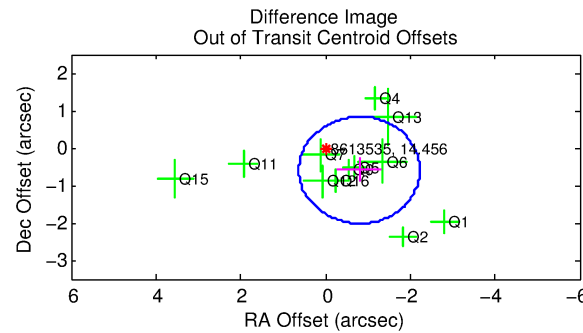
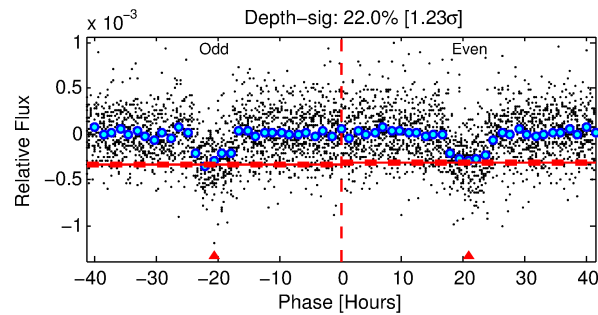
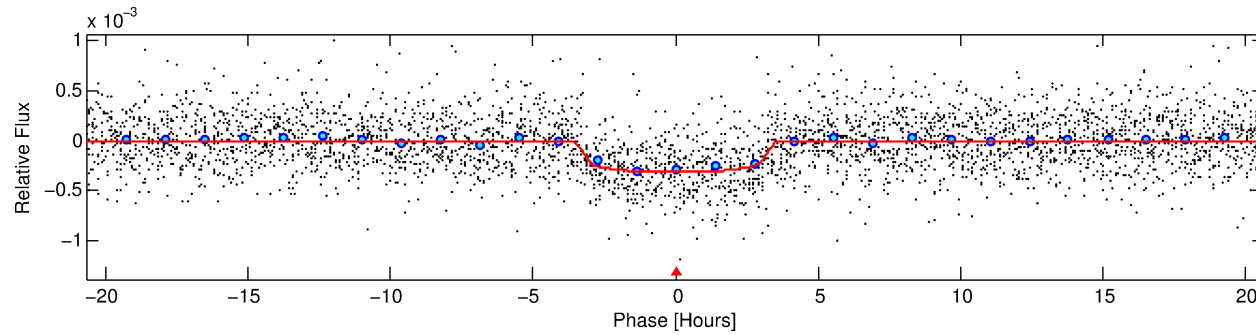
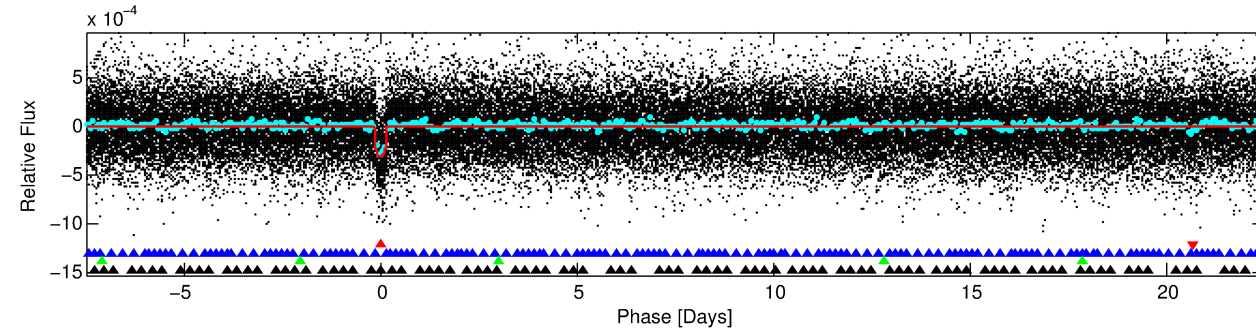
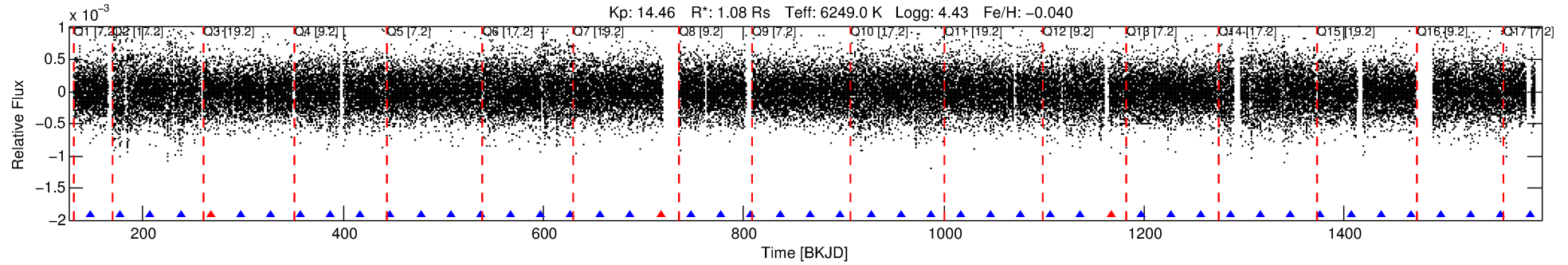
Ephemeris Match Information For 008613535-01

No Significant Match Found

DV One-Page Summary

KIC: 8613535 Candidate: 1 of 4 Period: 29.969 d

KOI: K02263.01 Corr: 0.986



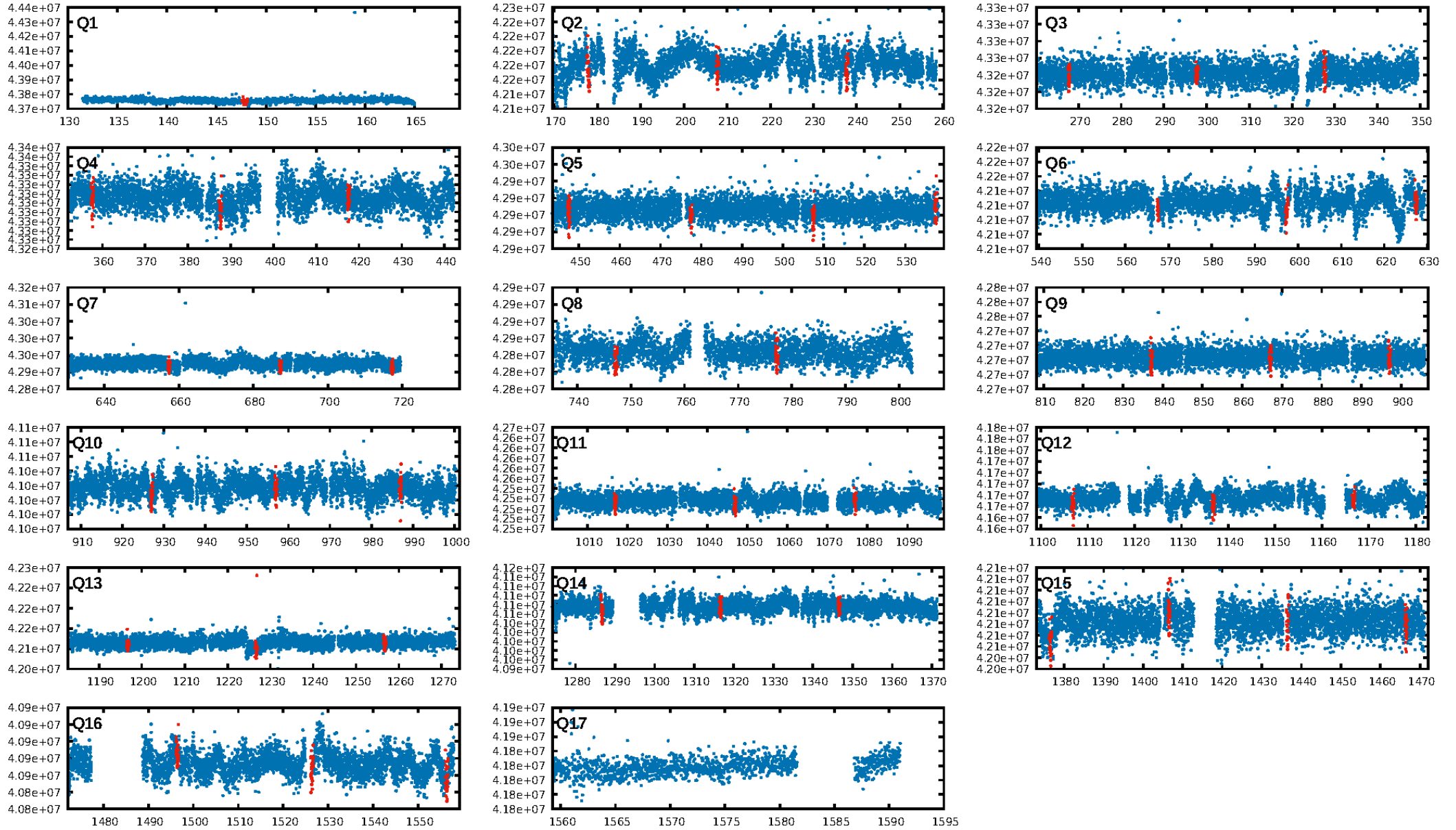
DV Fit Results:

Period = 29.96871 [0.00018] d
Epoch = 147.8565 [0.0047] BKJD
Rp/R* = 0.0182 [0.0026]
a/R* = 20.16 [14.53]
b = 0.82 [0.30]
Seff = 40.84 [16.26]
Teff = 645 [64] K
Rp = 2.13 [0.73] Re
a = 0.1968 [0.0510] AU
Ag = 165.78 [102.95] [1.60σ]
Teffp = 3576 [461] K [6.30σ]

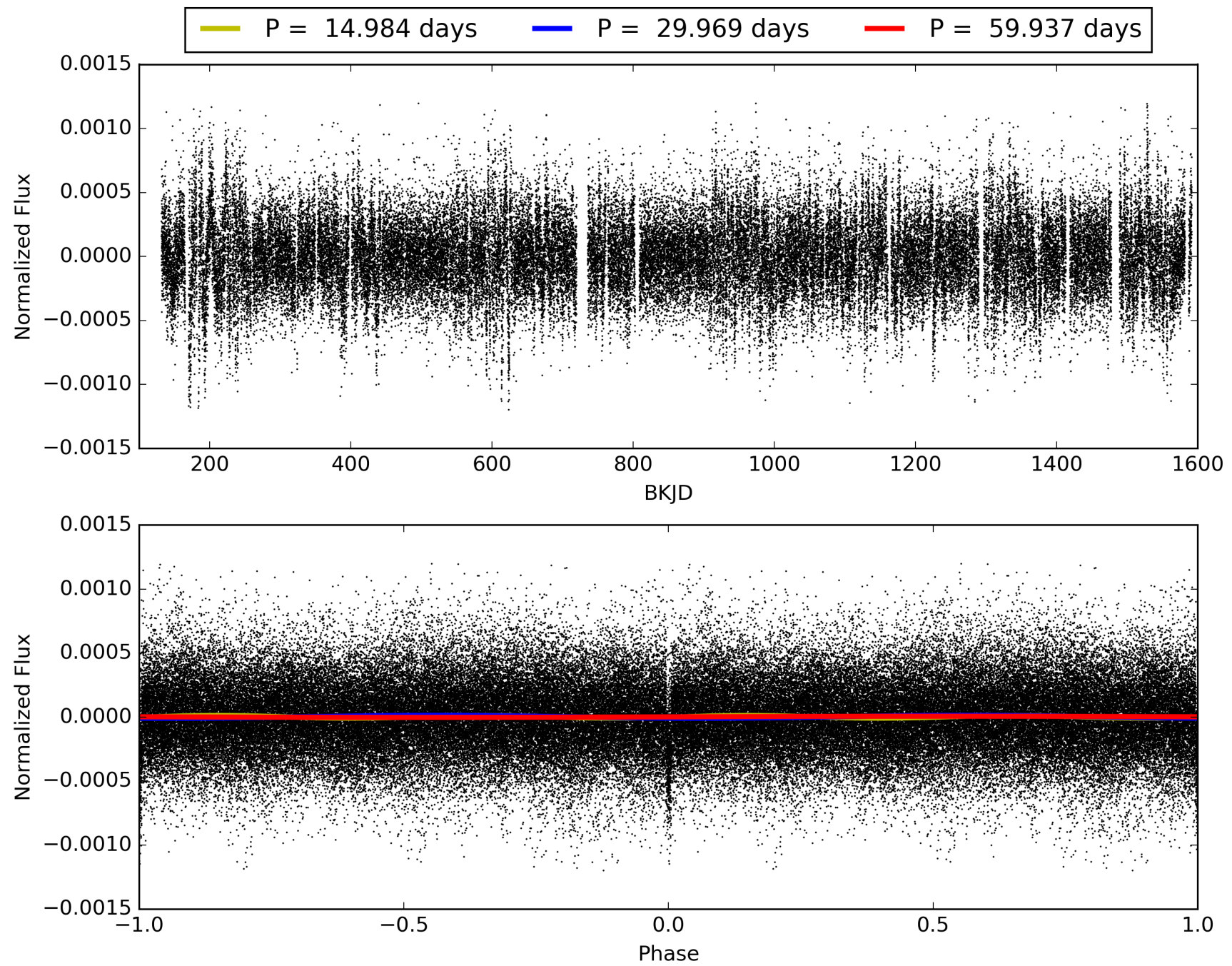
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [31.87σ]
LongPeriod-sig: 100.0% [379.79σ]
ModelChiSquare2-sig: 22.1%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.22e-71
RollingBand-fgt: 0.93 [43/46]
GhostDiagnostic-chr: 3.716
Centroid-sig: 12.5%
Centroid-so: 0.994 arcsec [1.46σ]
OotOffset-rm: 0.995 arcsec [2.09σ]
KicOffset-rm: 1.159 arcsec [2.58σ]
OotOffset-st: 2/3/3/4 [12]
KicOffset-st: 2/3/3/4 [12]
DiffImageQuality-fgm: 0.83 [10/12]
DiffImageOverlap-fno: 1.00 [16/16]

TCE 008613535-01, PDC Light Curves

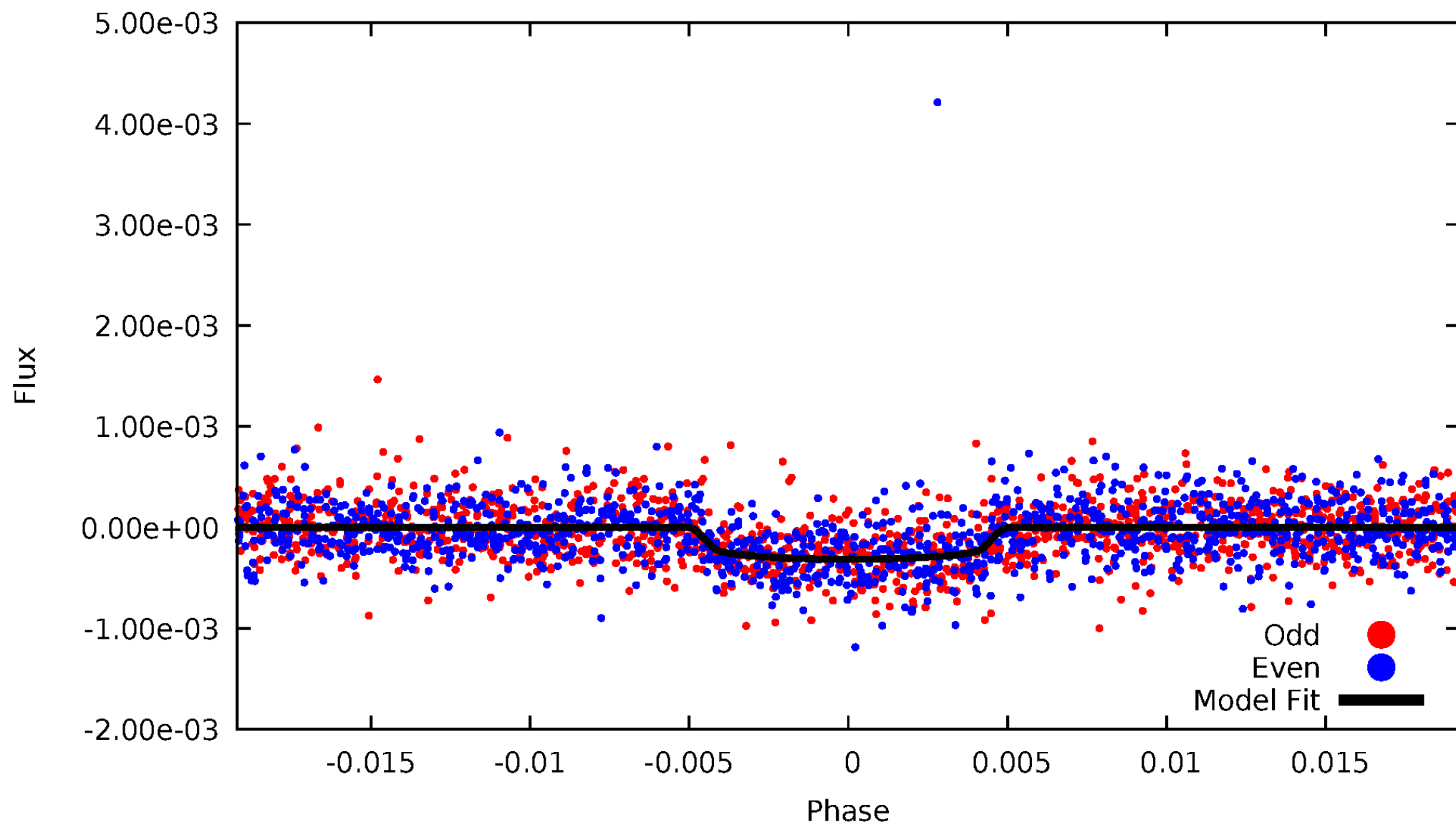


TCE 008613535-01



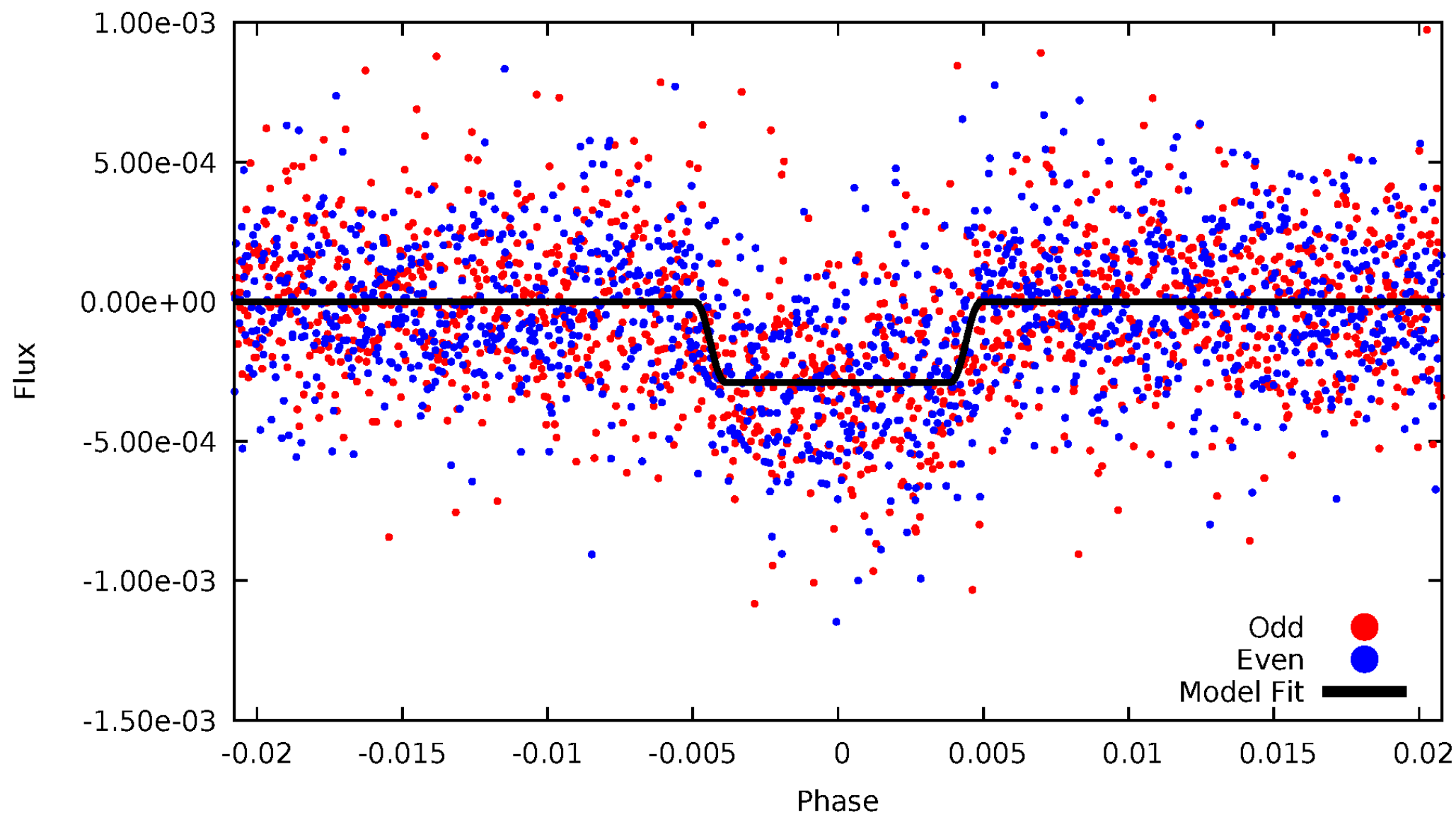
DV Odd/Even

TCE 008613535-01



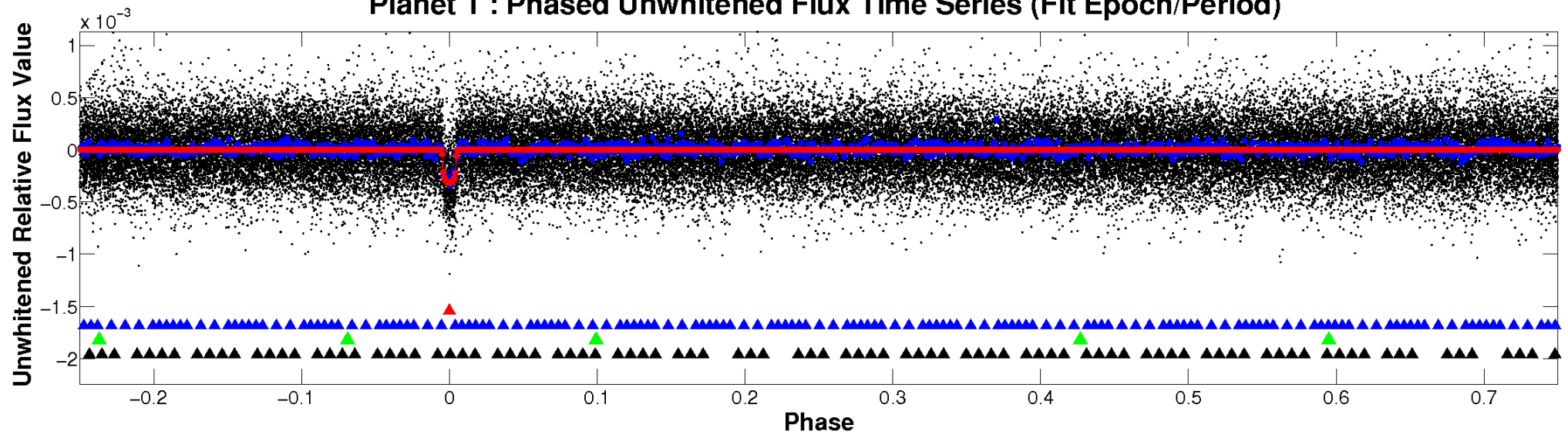
ALT Odd/Even

TCE 008613535-01

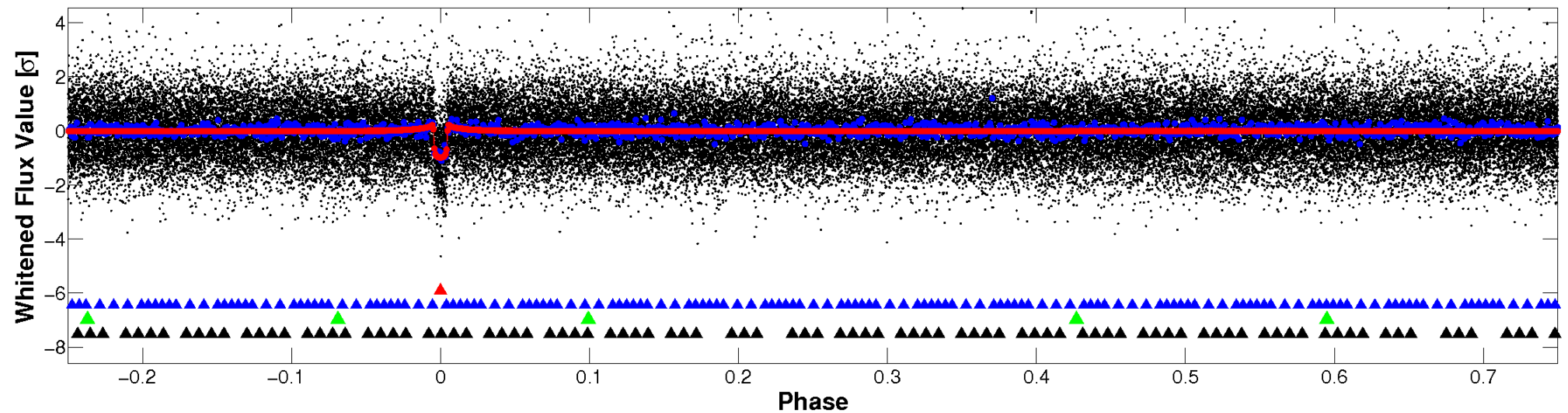


Non-Whitened Vs. Whitened Light Curve

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

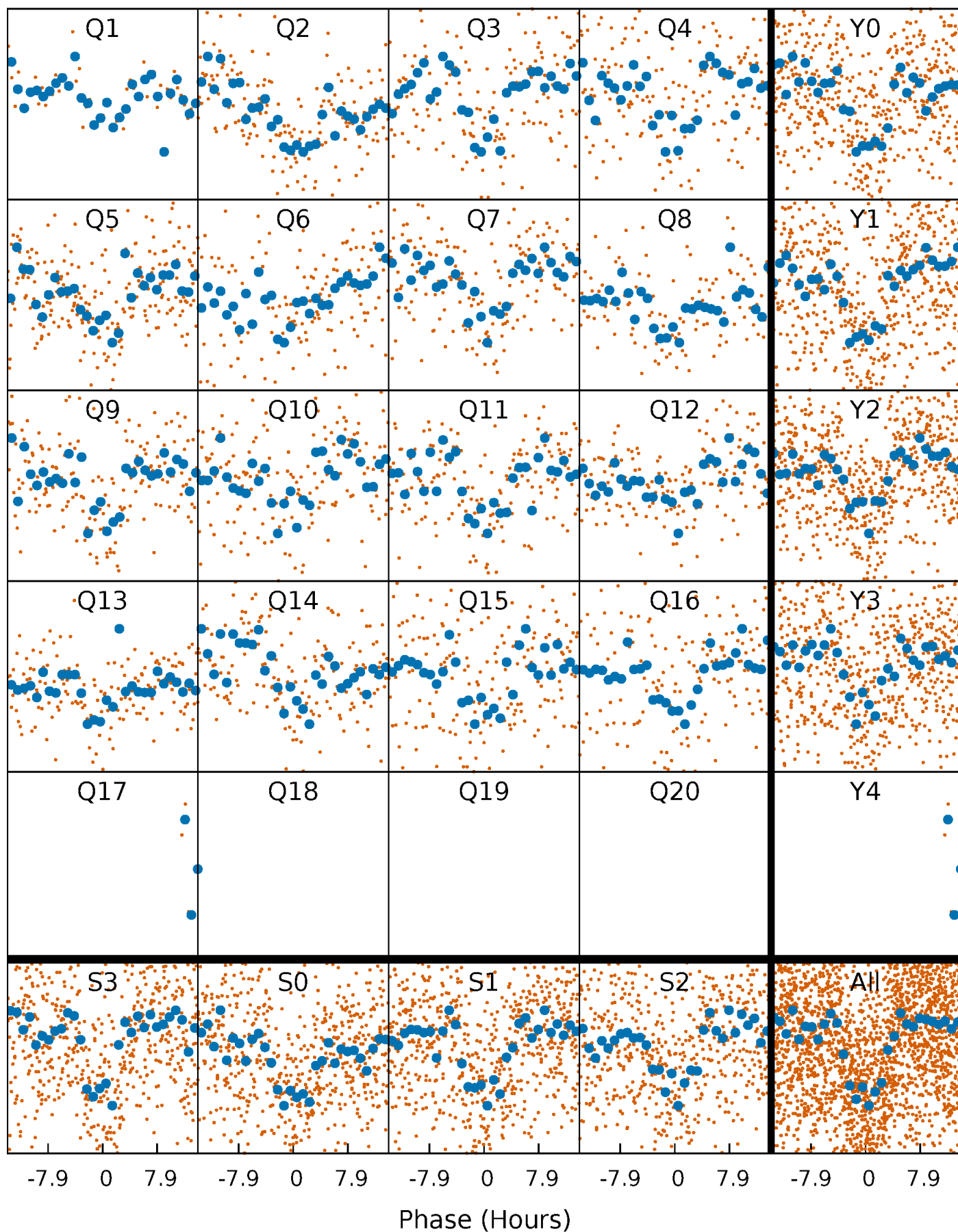


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



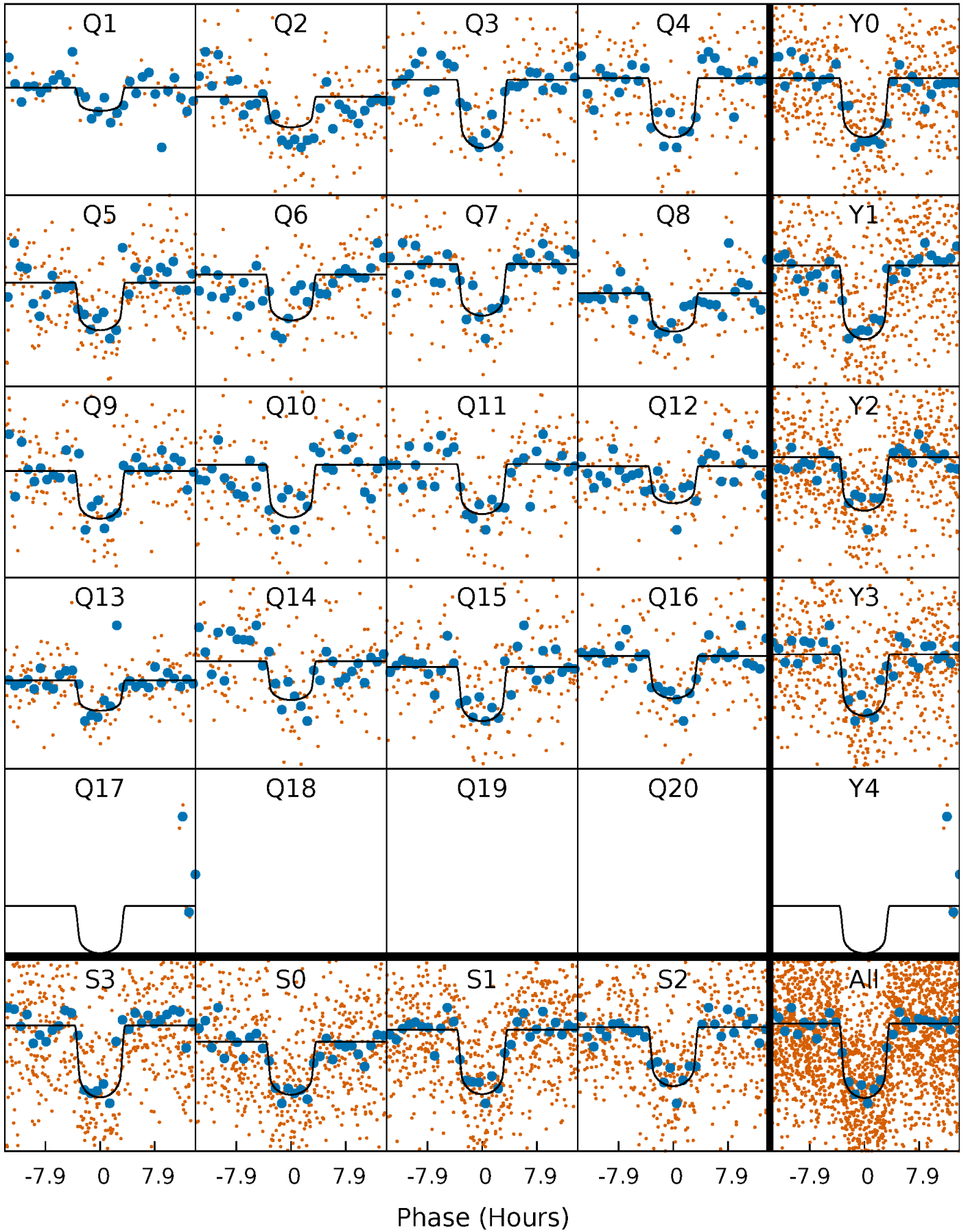
PDC Quarter-Phased Transit Curves

TCE 008613535-01 P= 29.968709 Days $T_0=147.856477$ (BKJD)



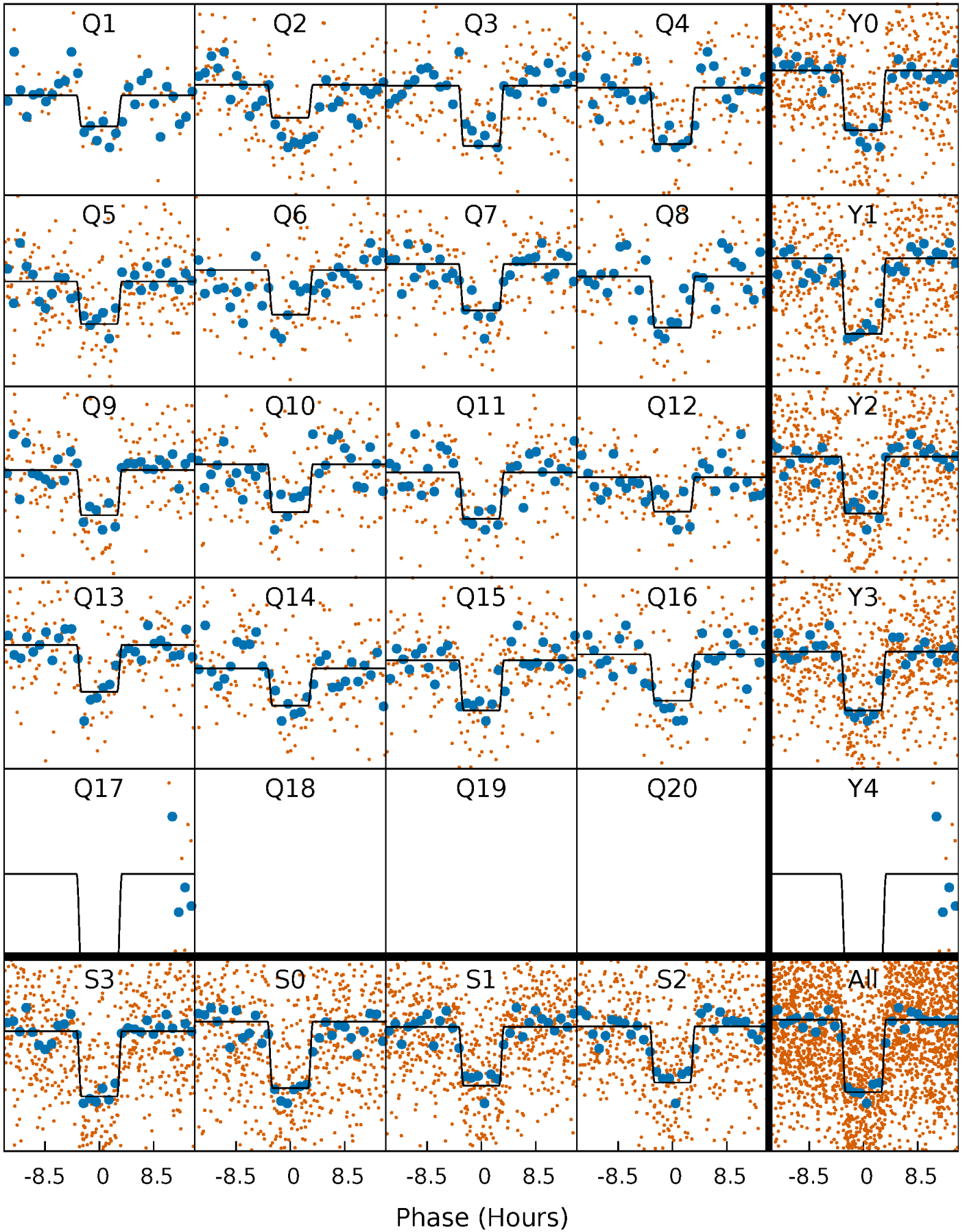
DV Quarter-Phased Transit Curves

TCE 008613535-01 P= 29.968709 Days $T_0=147.856477$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

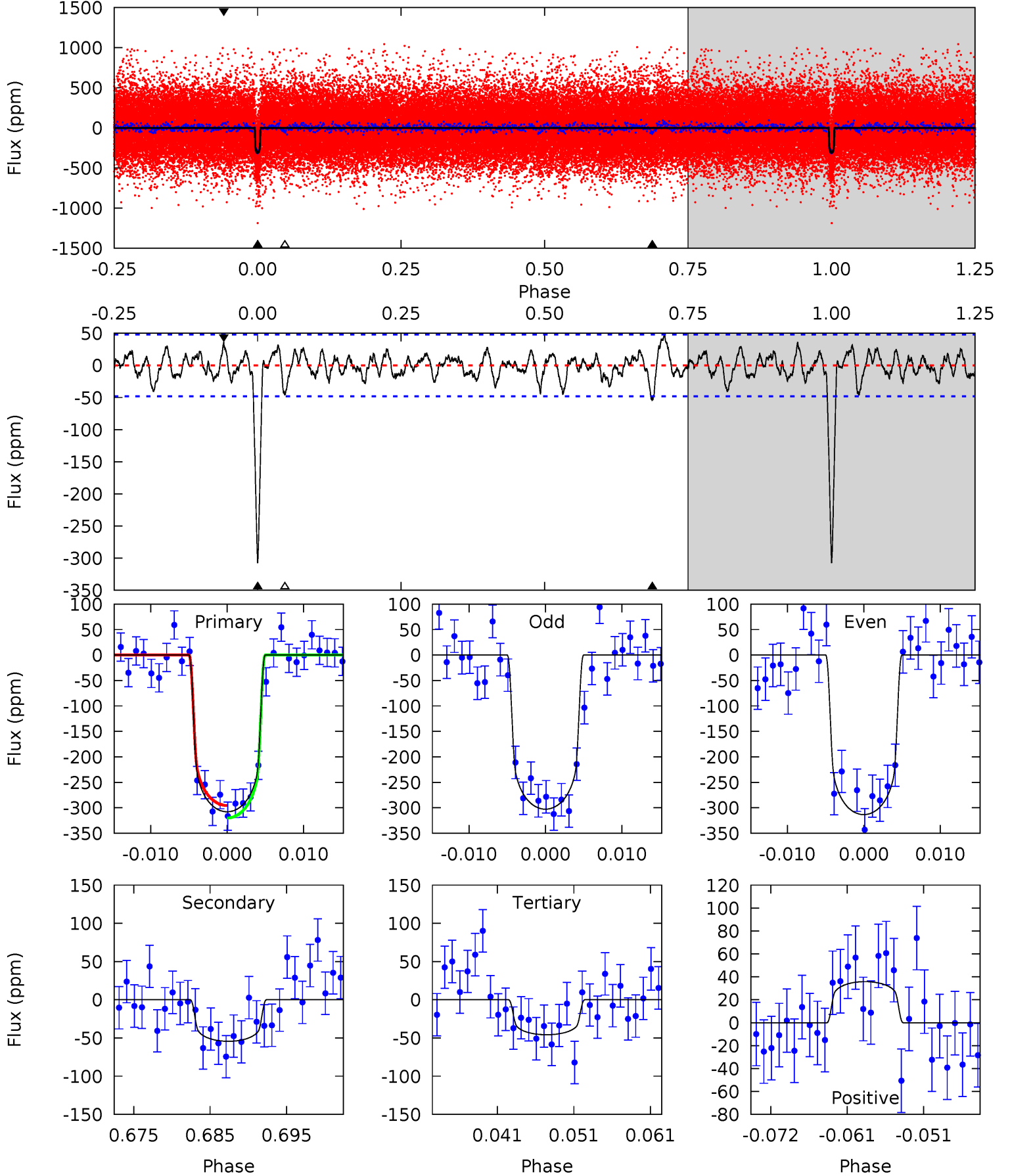
TCE 008613535-01 P= 29.969441 Days $T_0=147.844139$ (BKJD)



DV Model-Shift Uniqueness Test

008613535-01, $P = 29.968709$ Days, $E = 117.887768$ Days

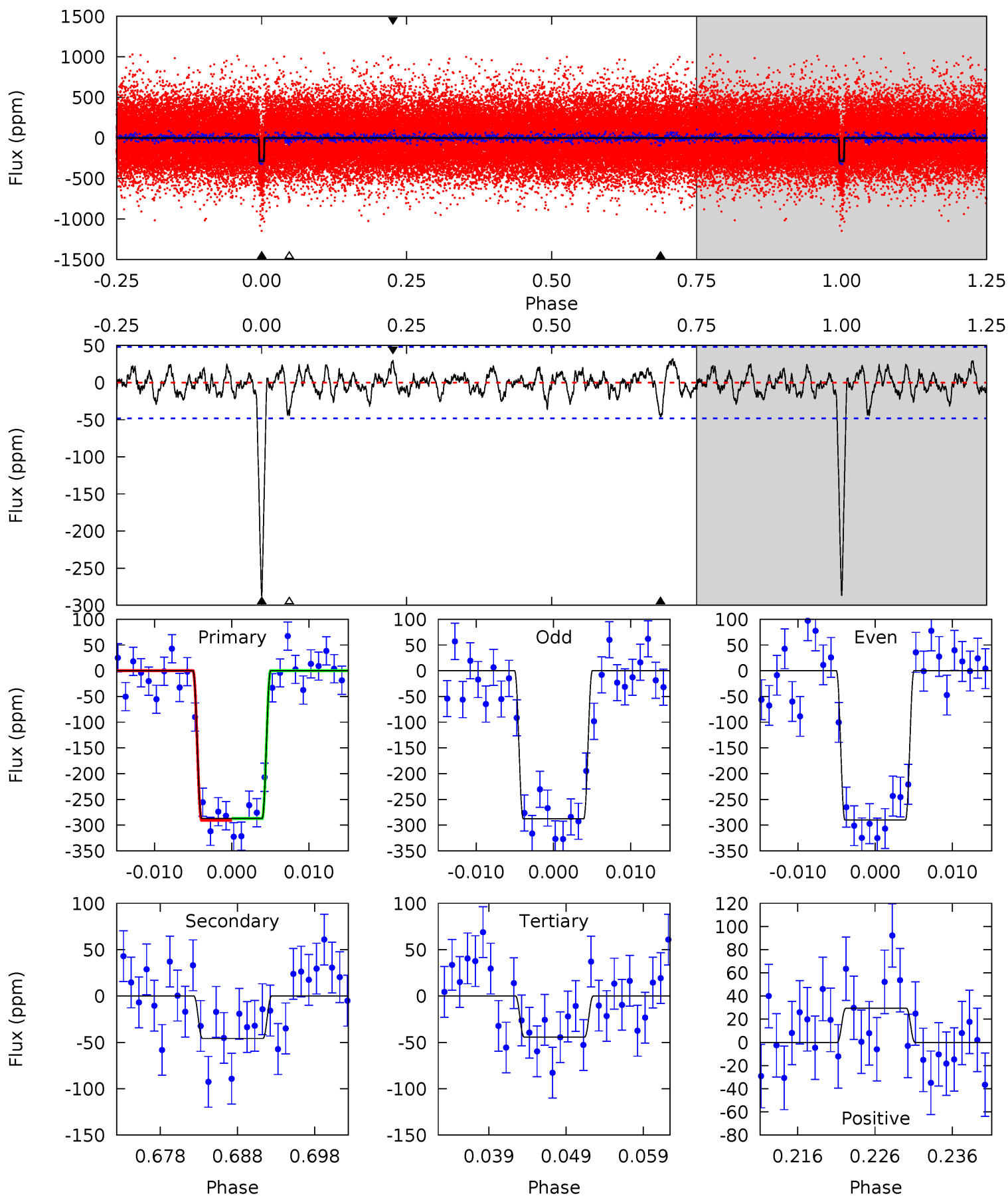
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
32.2	5.68	4.78	3.74	5.02	2.57	1.60	27.4	28.4	0.90	1.94	0.56	0.99	0.13	1.28



Alt Model-Shift Uniqueness Test

008613535-01, $P = 29.969441$ Days, $E = 117.874698$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
30.0	4.79	4.62	3.07	5.03	2.58	1.25	25.3	26.9	0.17	1.72	0.14	0.98	0.10	0.18



Stellar Parameters For KIC 008613535

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6249^{+174}_{-217}	$4.428^{+0.054}_{-0.202}$	$-0.040^{+0.250}_{-0.300}$	$1.076^{+0.335}_{-0.112}$	$1.130^{+0.159}_{-0.159}$	$1.279^{+0.356}_{-0.665}$
	+3%/-3%	+1%/-5%	+625%/-750%	+31%/-10%	+14%/-14%	+28%/-52%
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 008613535-01 / KOI 2263.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-54 ± 10	$2.22^{+0.42}_{-0.37}$	921^{+58}_{-44}	4243^{+293}_{-263}	231^{+102}_{-77}
Alt.	-46 ± 10	$2.11^{+0.42}_{-0.41}$	921^{+65}_{-51}	4172^{+319}_{-271}	216^{+113}_{-79}

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 $A_{obs} \gg 1.0$

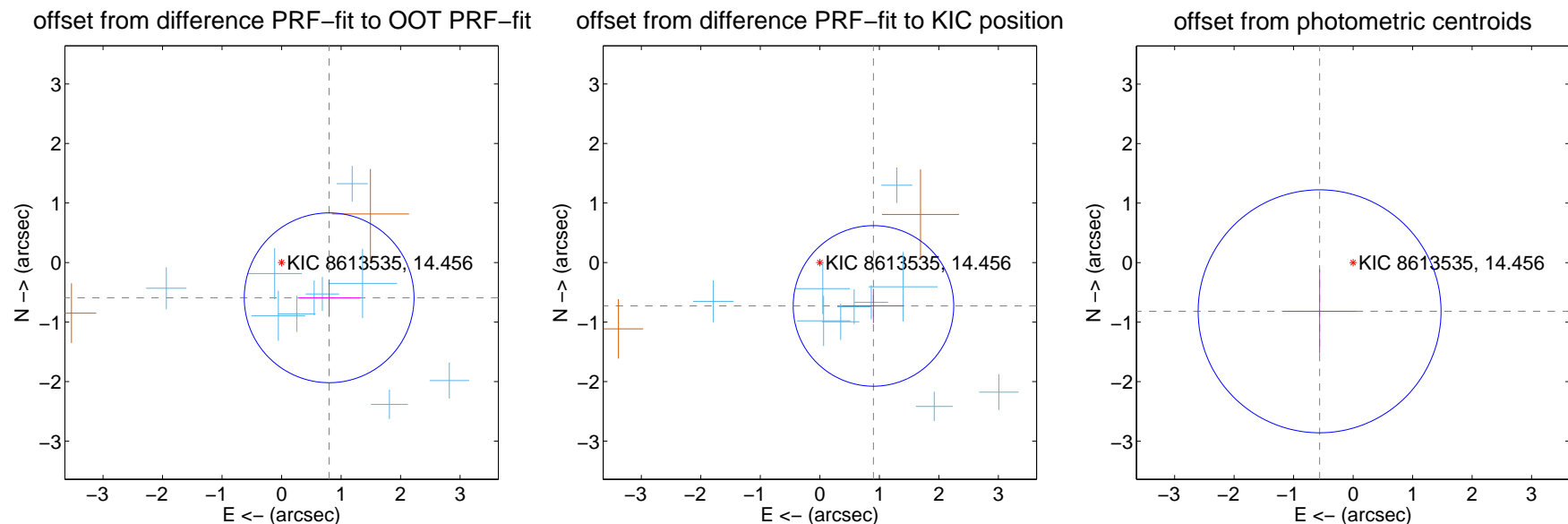
DV Centroid Data

Supplemental centroid analysis for 008613535-01. Kepler magnitude: 14.46. Transit SNR 22.29

There are 10 quarters with good PRF difference image offsets

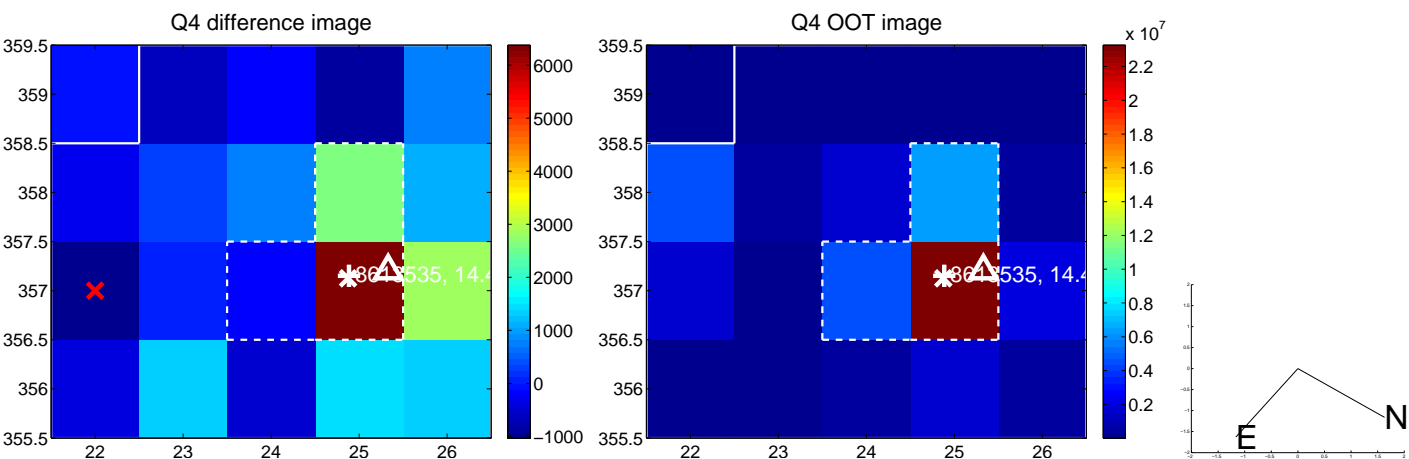
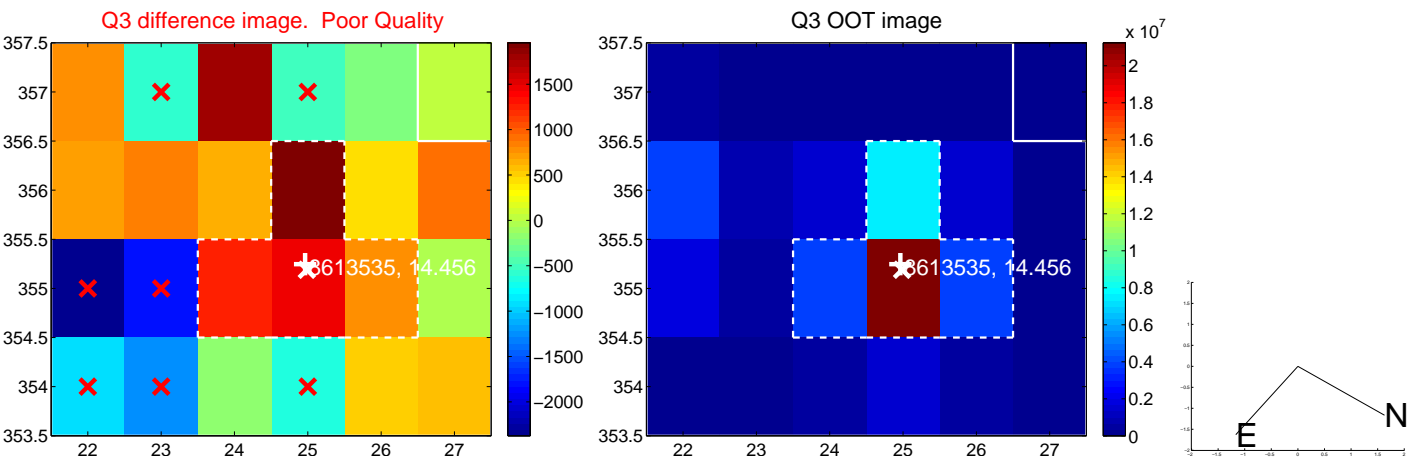
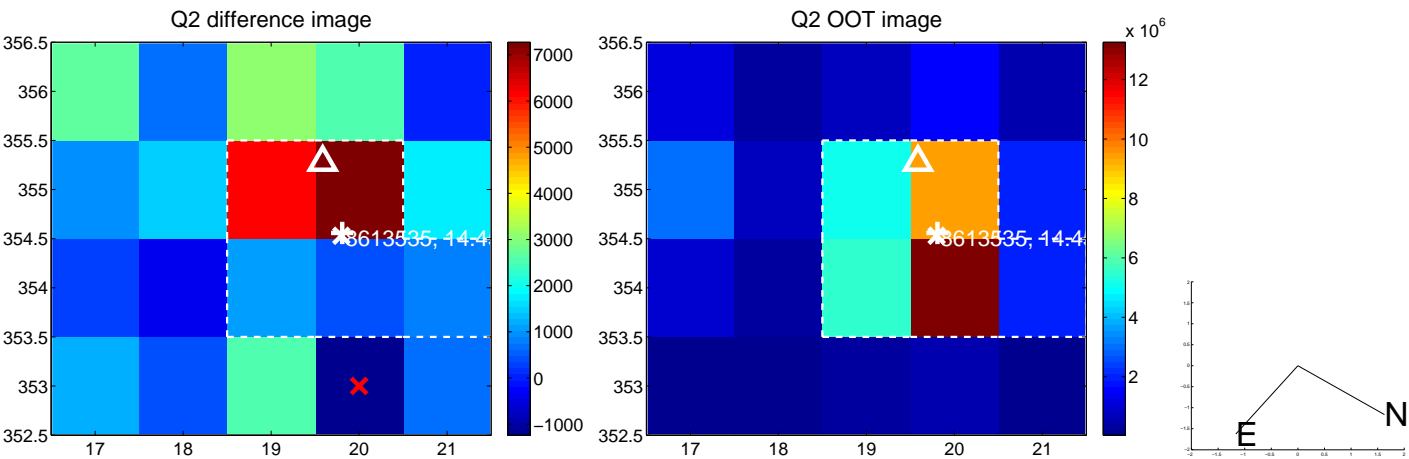
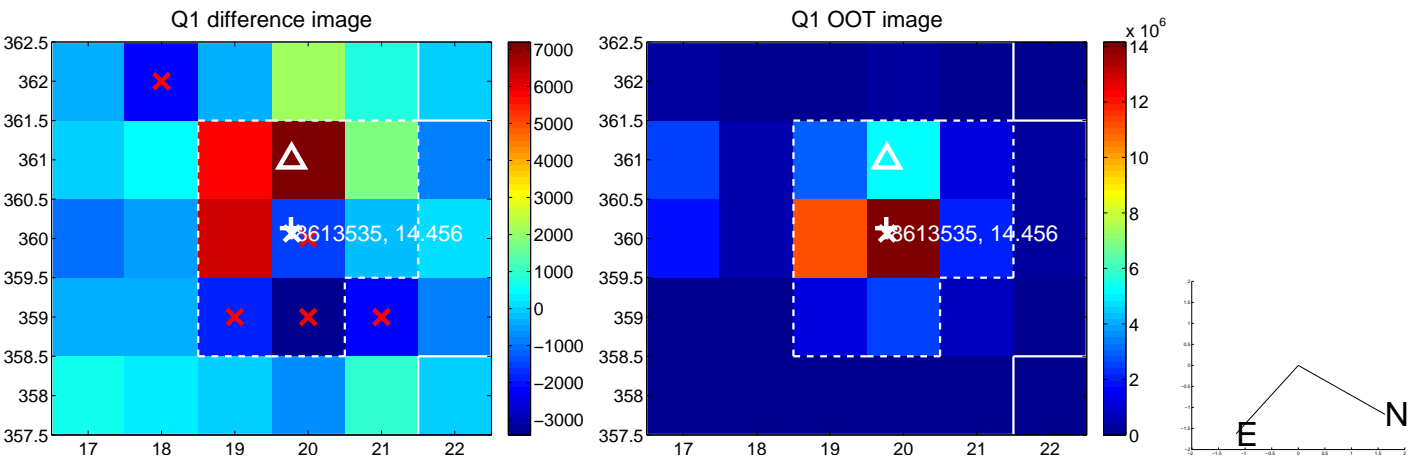
The direct PRF centroid is offset from the target star catalog position by about 0.16 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.995 ± 0.476	2.09	-0.799 ± 0.516	-0.592 ± 0.305
PRF-fit source offset from KIC position	1.159 ± 0.450	2.58	-0.901 ± 0.514	-0.729 ± 0.288
photometric centroid source offset	0.99 ± 0.68	1.46	0.56 ± 0.61	-0.82 ± 0.71

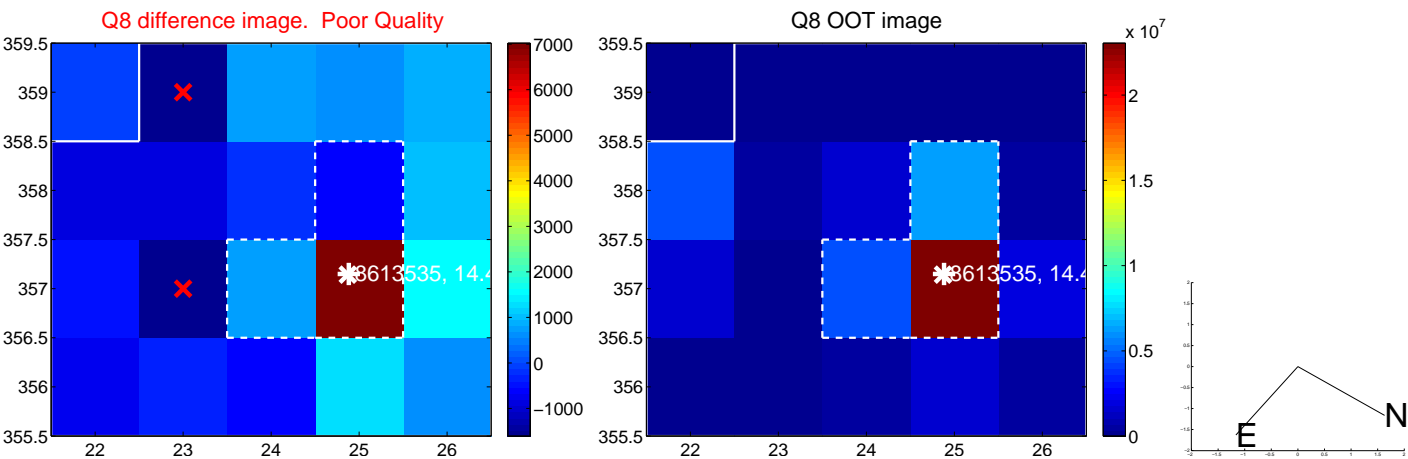
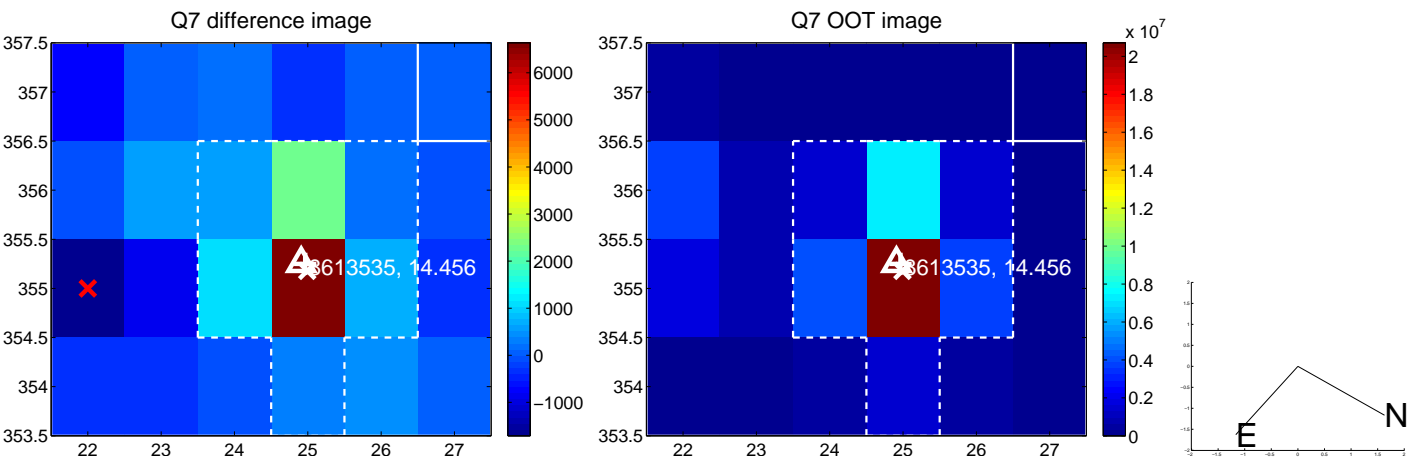
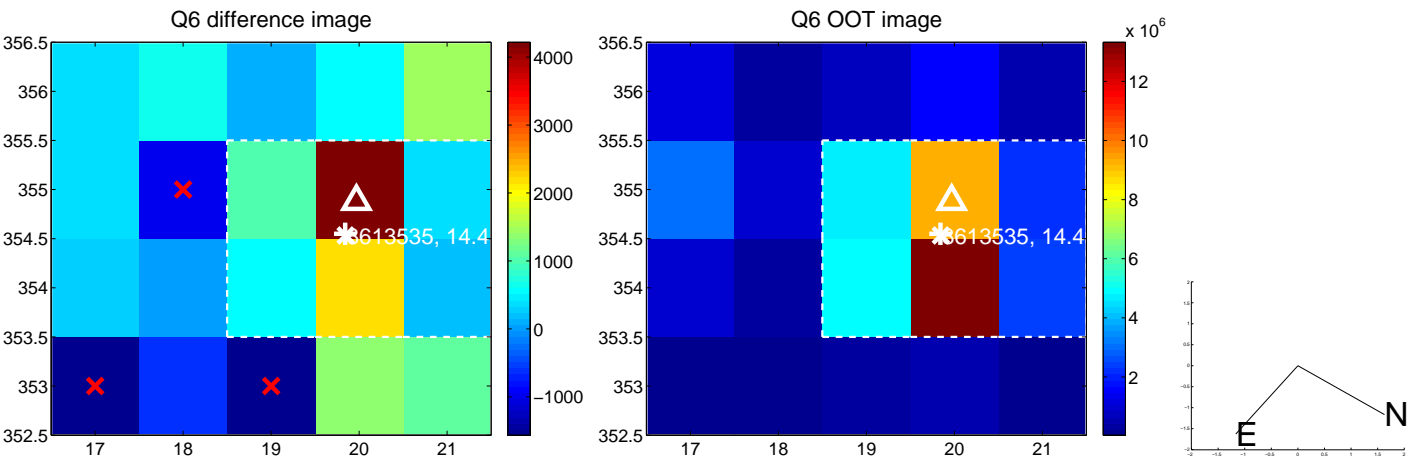
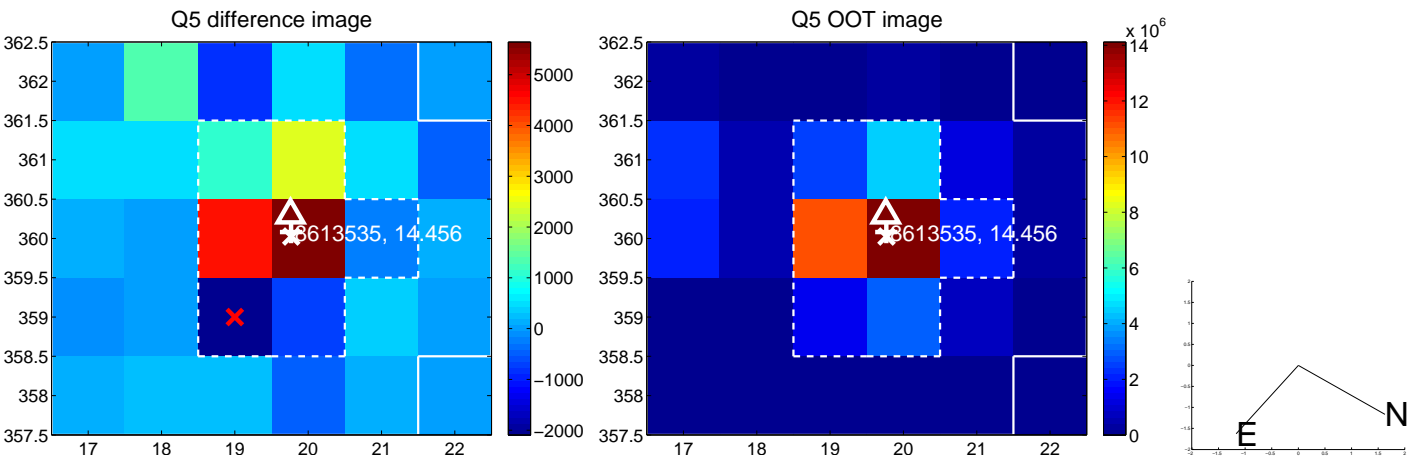


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

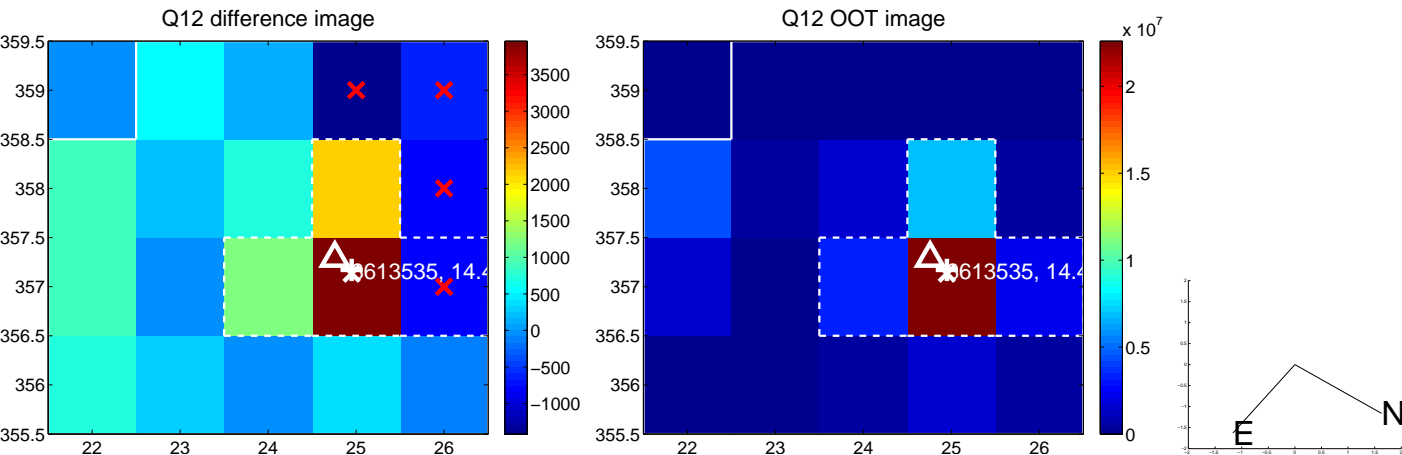
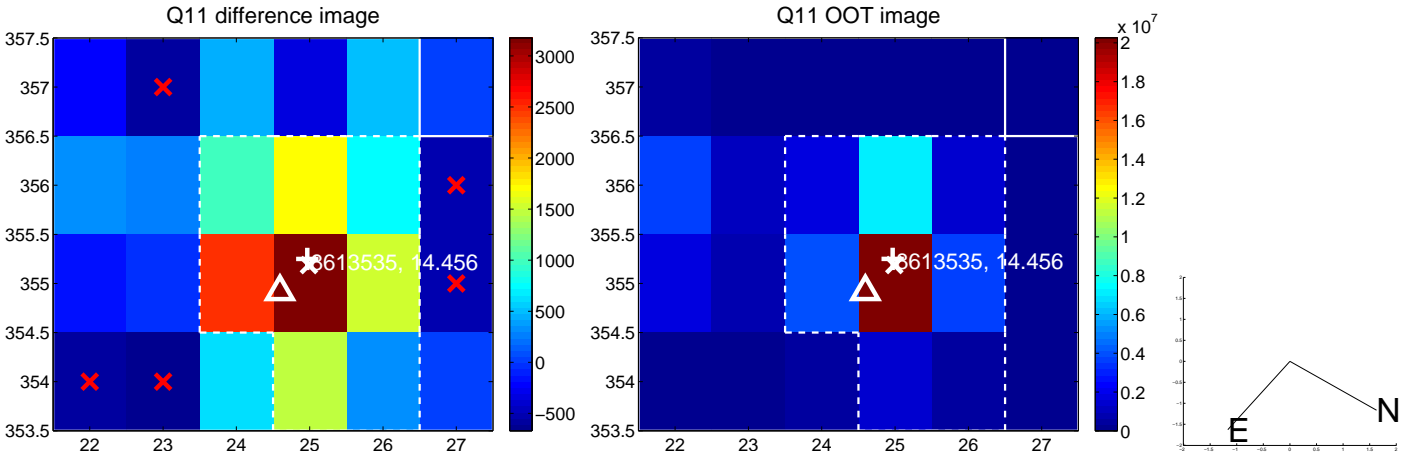
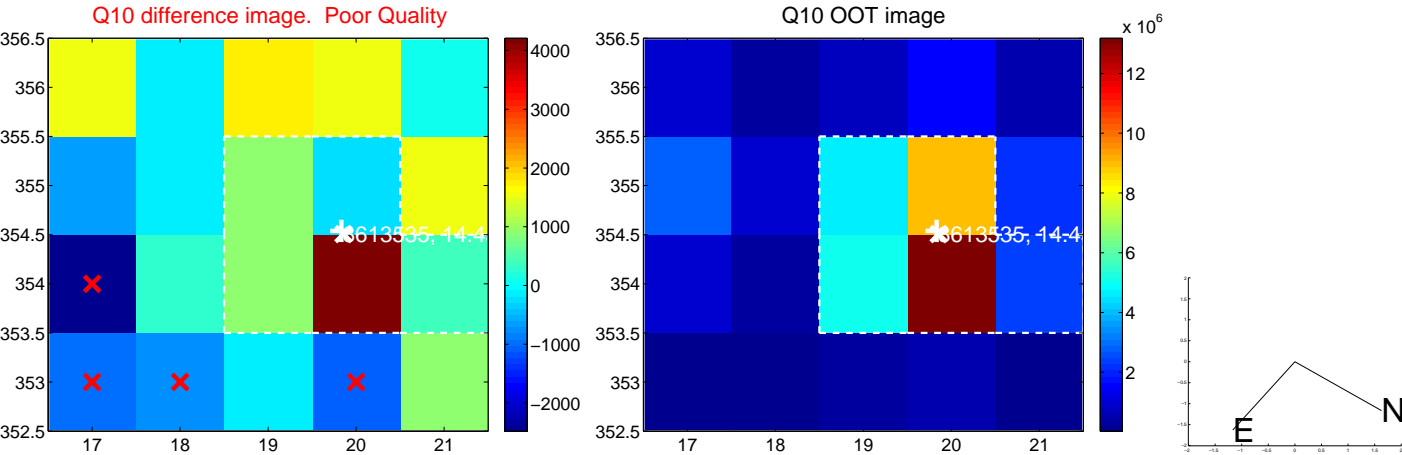
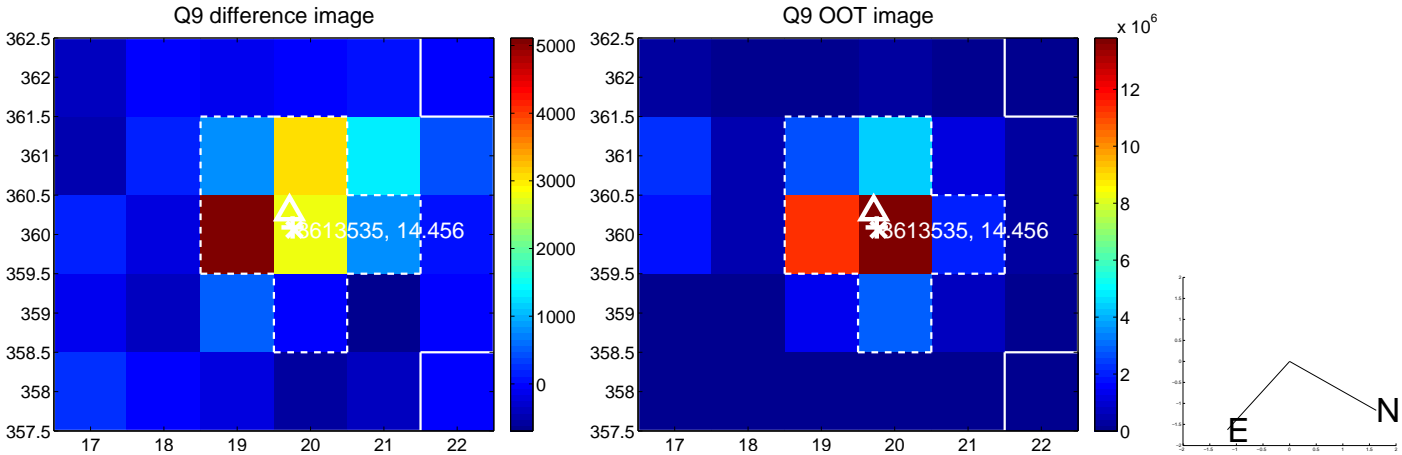
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



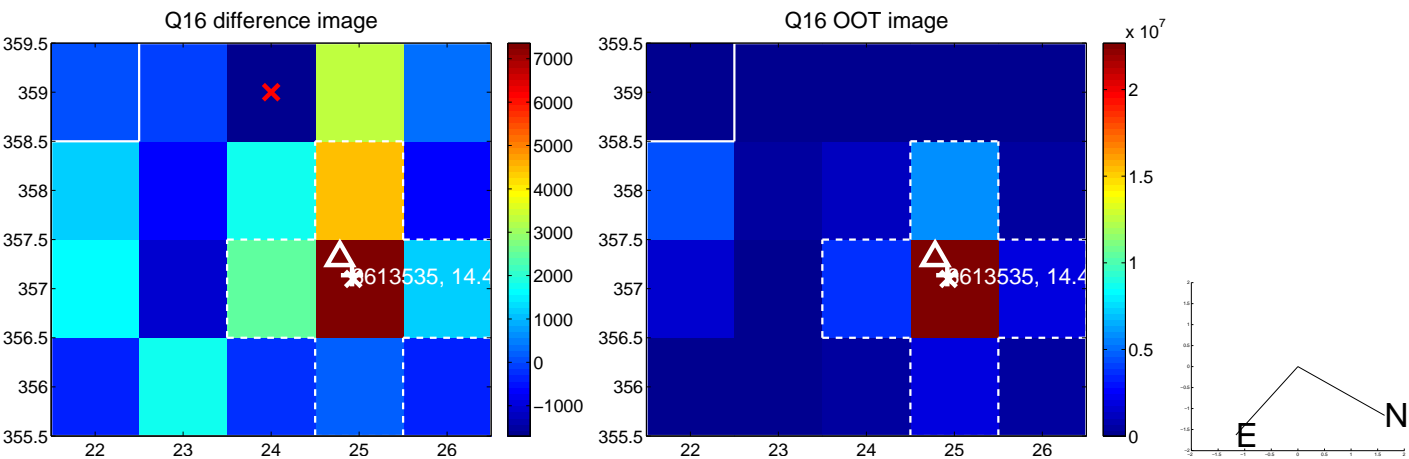
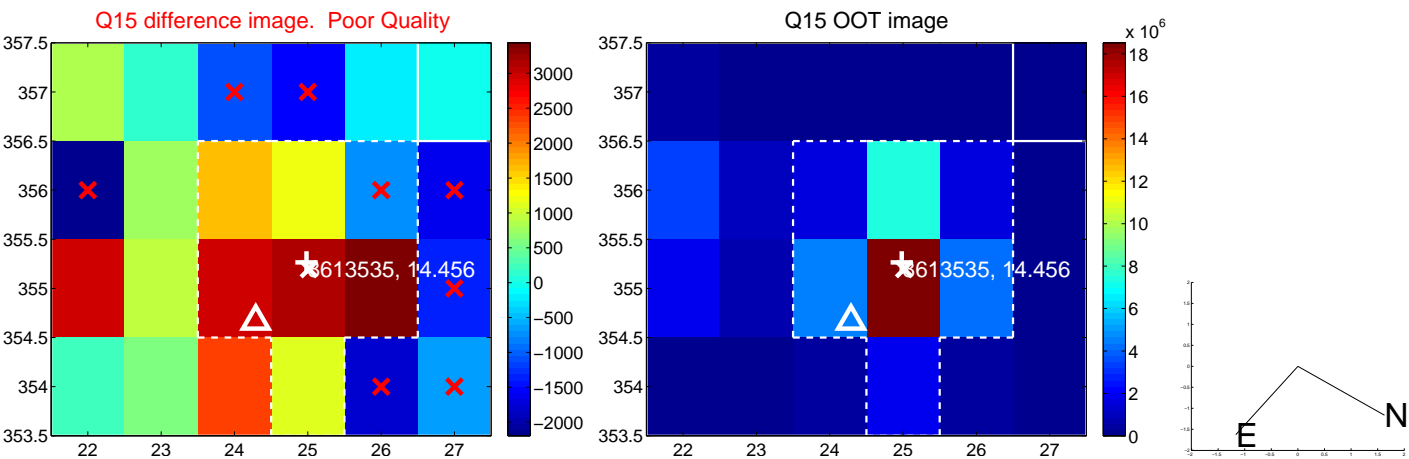
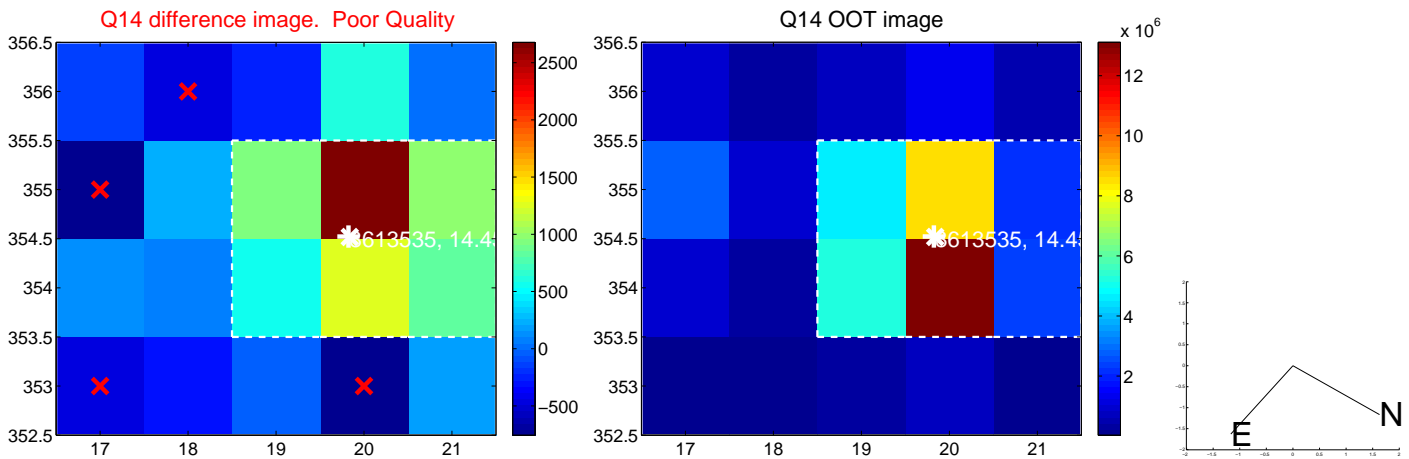
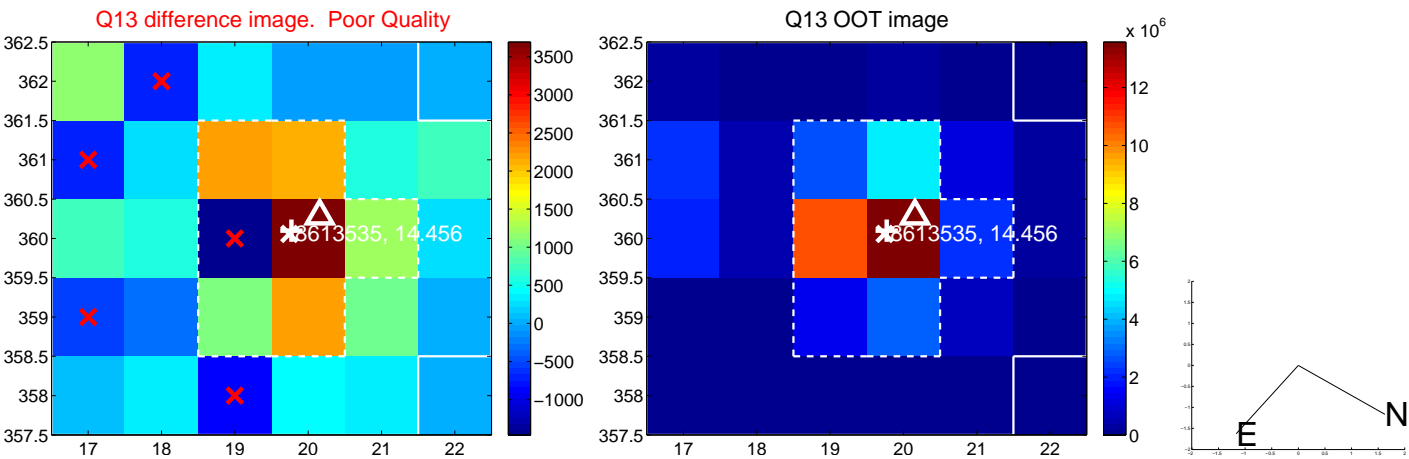
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



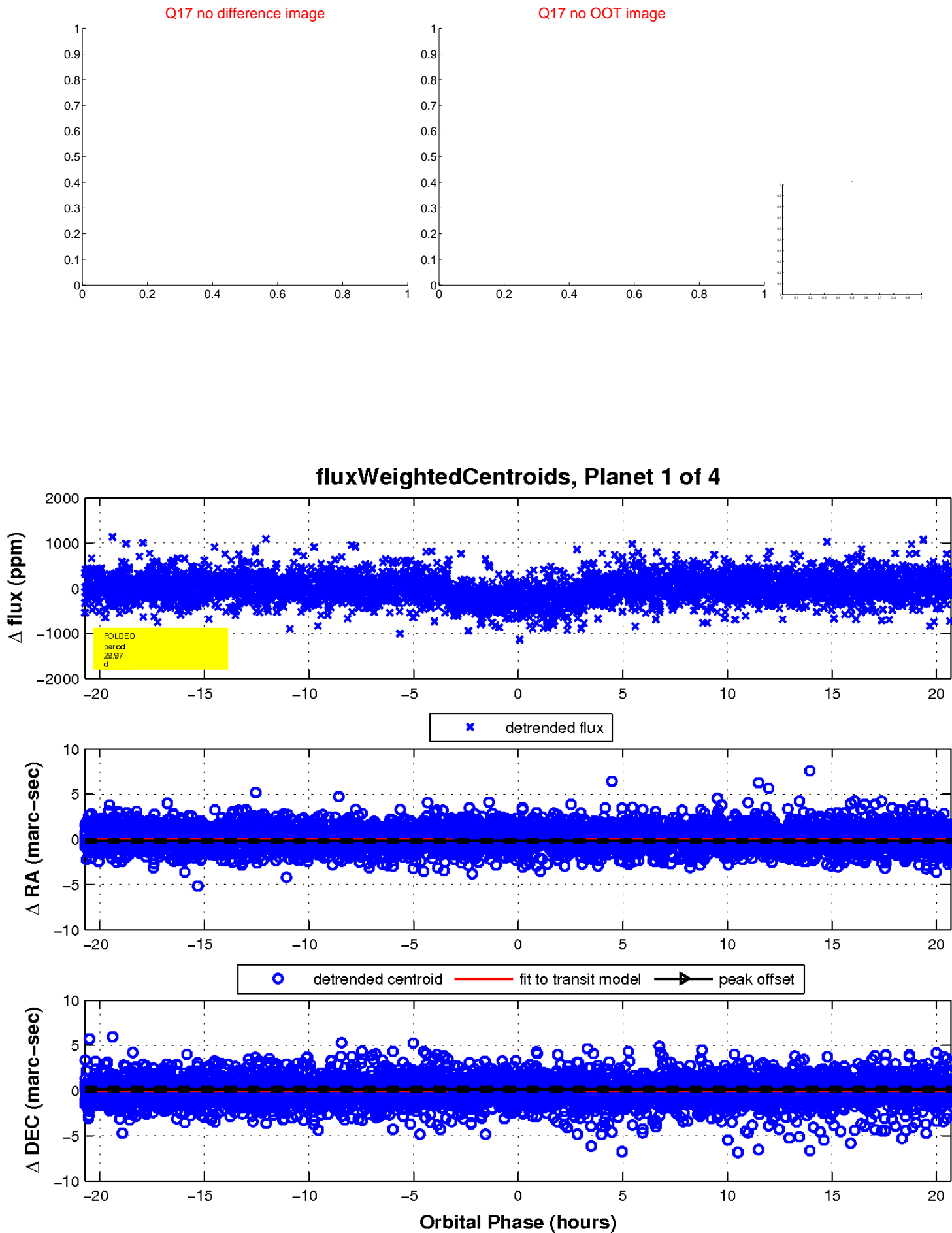
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

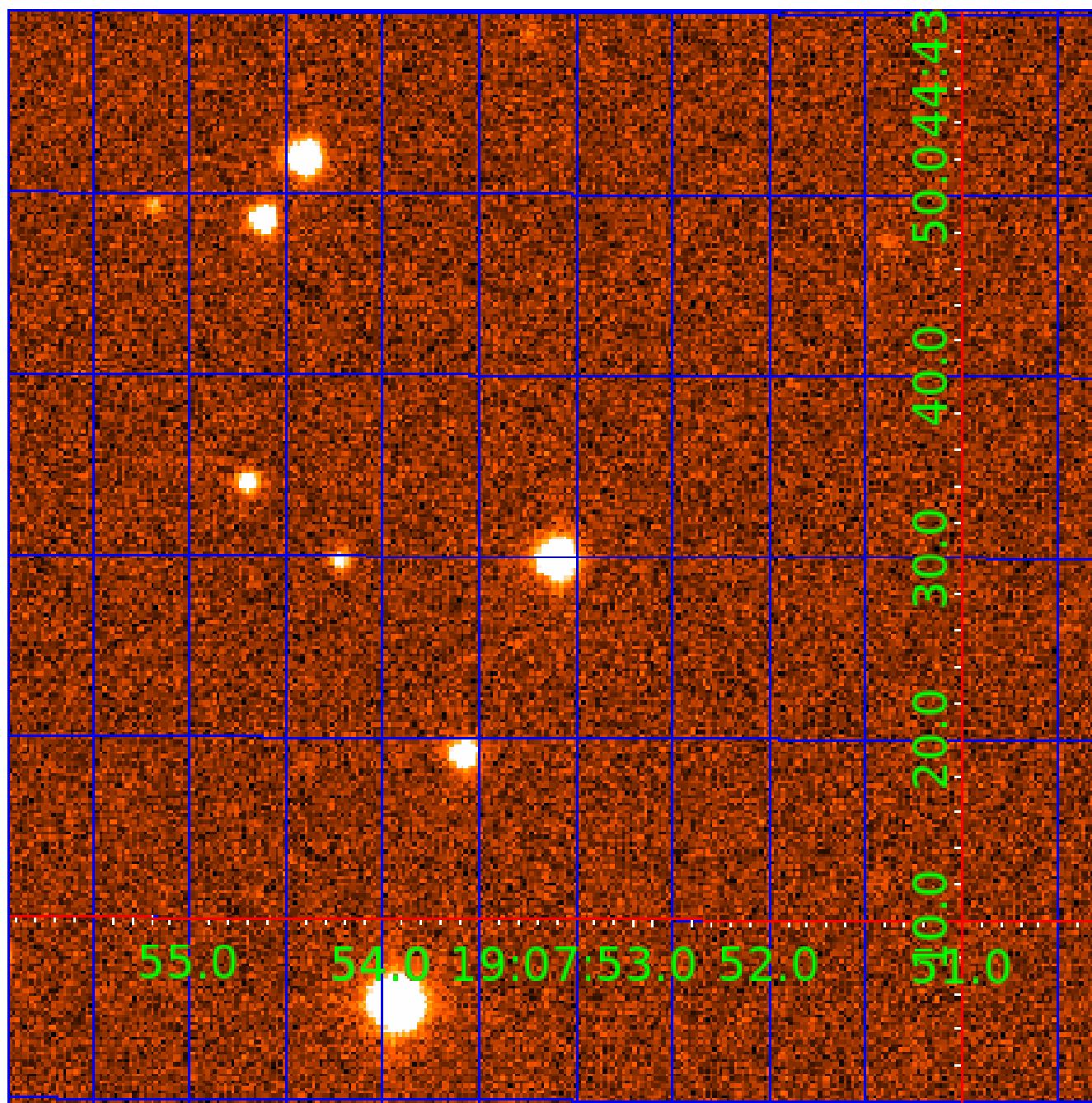


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008613535

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
008613535-01	OBS	PC	0.96	0	0	0	0	NO_COMMENT
008613535-02	OBS	PC	1.00	0	0	0	0	NO_COMMENT
008613535-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008613535-04	OBS	PC	0.55	0	0	0	0	CENT_FEW_MEAS

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

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

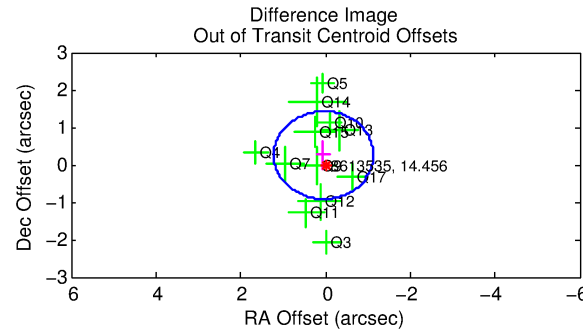
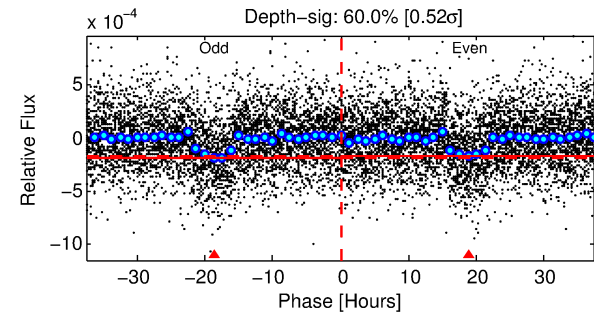
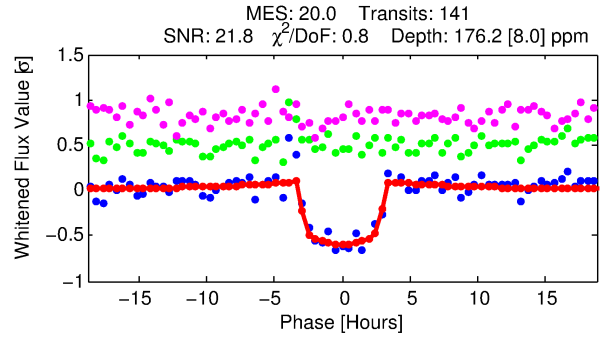
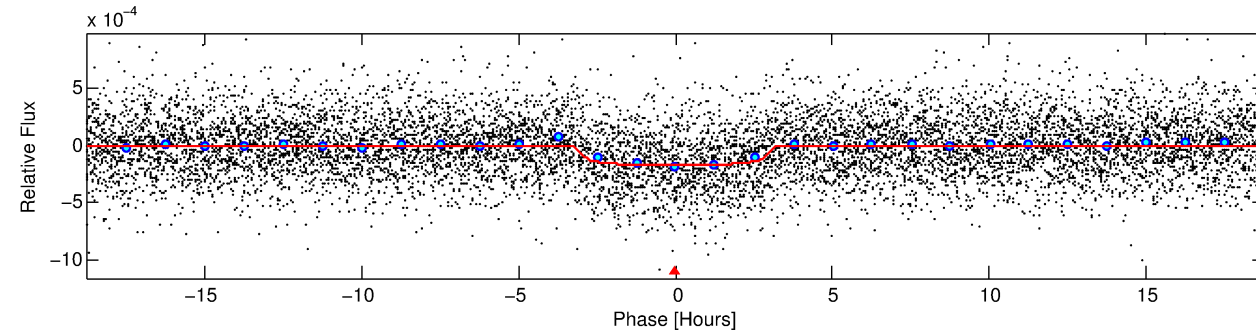
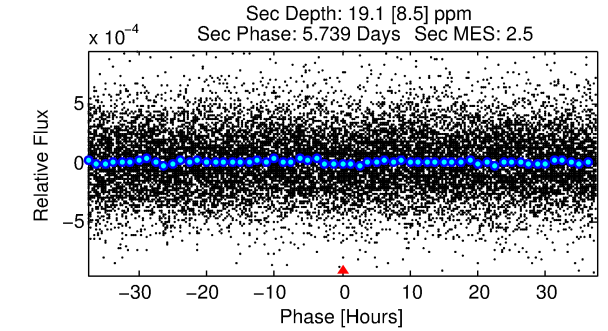
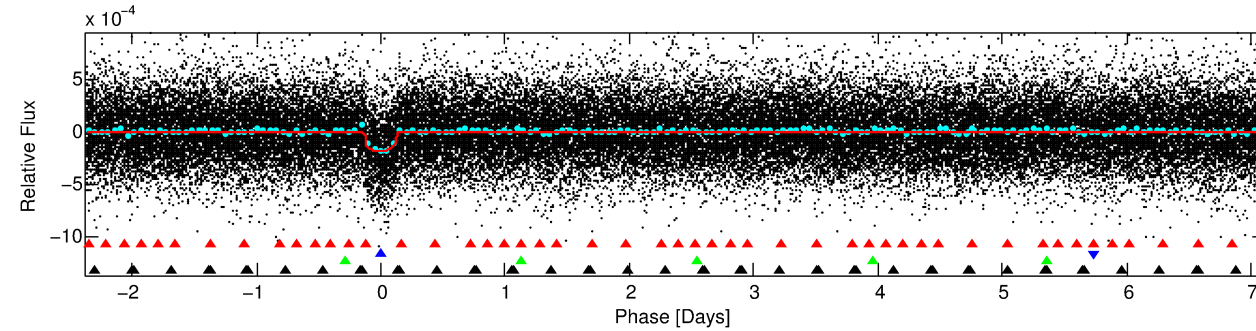
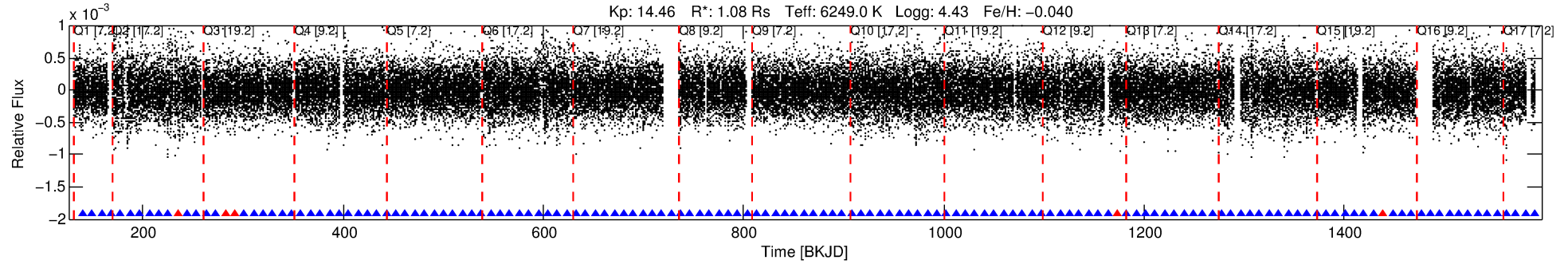
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008613535-02

No Significant Match Found

DV One-Page Summary

KIC: 8613535 Candidate: 2 of 4 Period: 9.479 d
KOI: K02263.02 Corr: 0.994



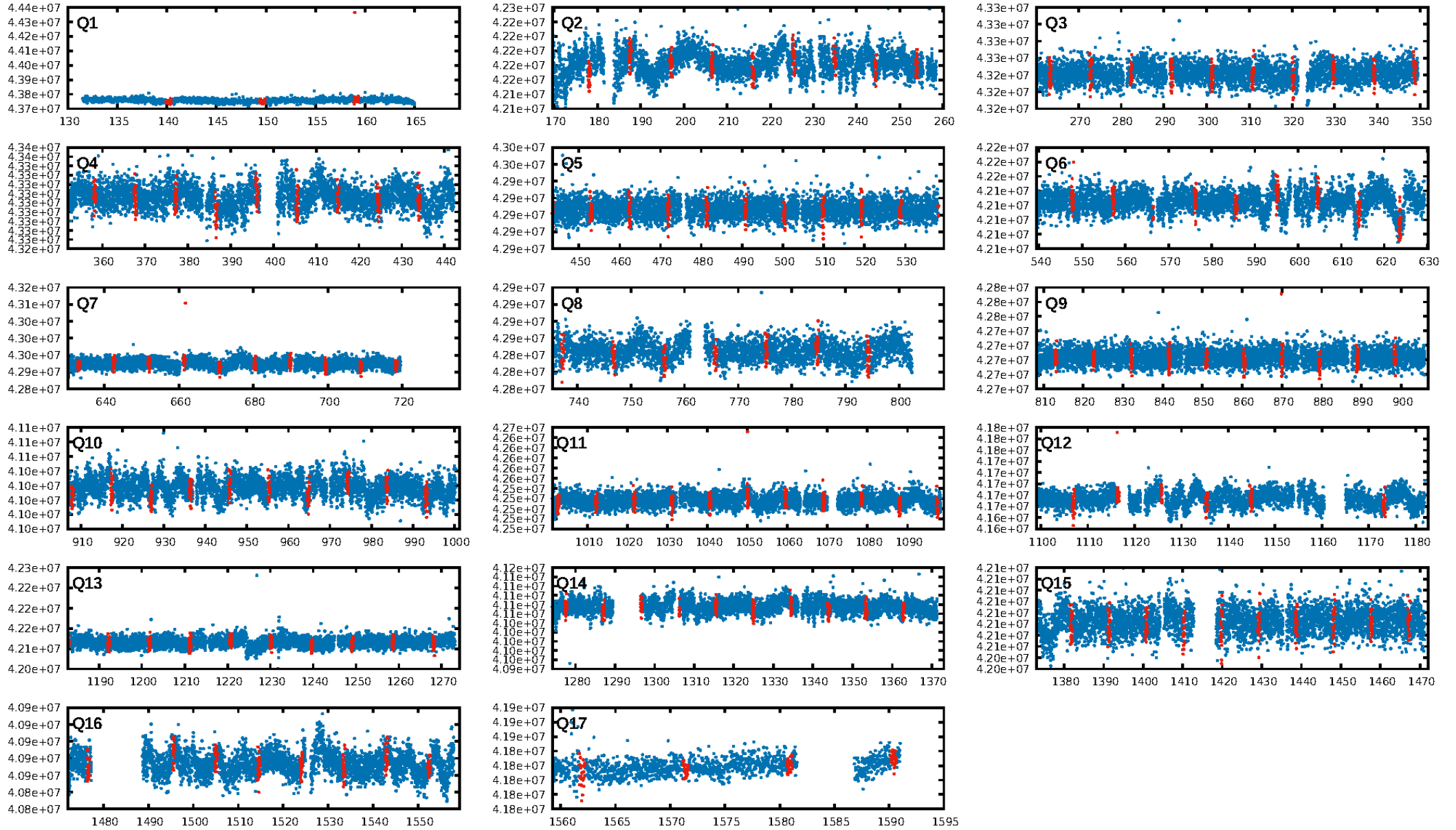
DV Fit Results:

Period = 9.47853 [0.00005] d
Epoch = 140.1647 [0.0046] BKJD
Rp/R* = 0.0135 [0.0032]
a/R* = 7.13 [8.69]
b = 0.81 [0.54]
Seff = 189.54 [75.46]
Teff = 946 [94] K
Rp = 1.58 [0.62] Re
a = 0.0914 [0.0237] AU
Ag = 34.89 [26.29] [1.29 σ]
Teffp = 3555 [595] K [4.33 σ]

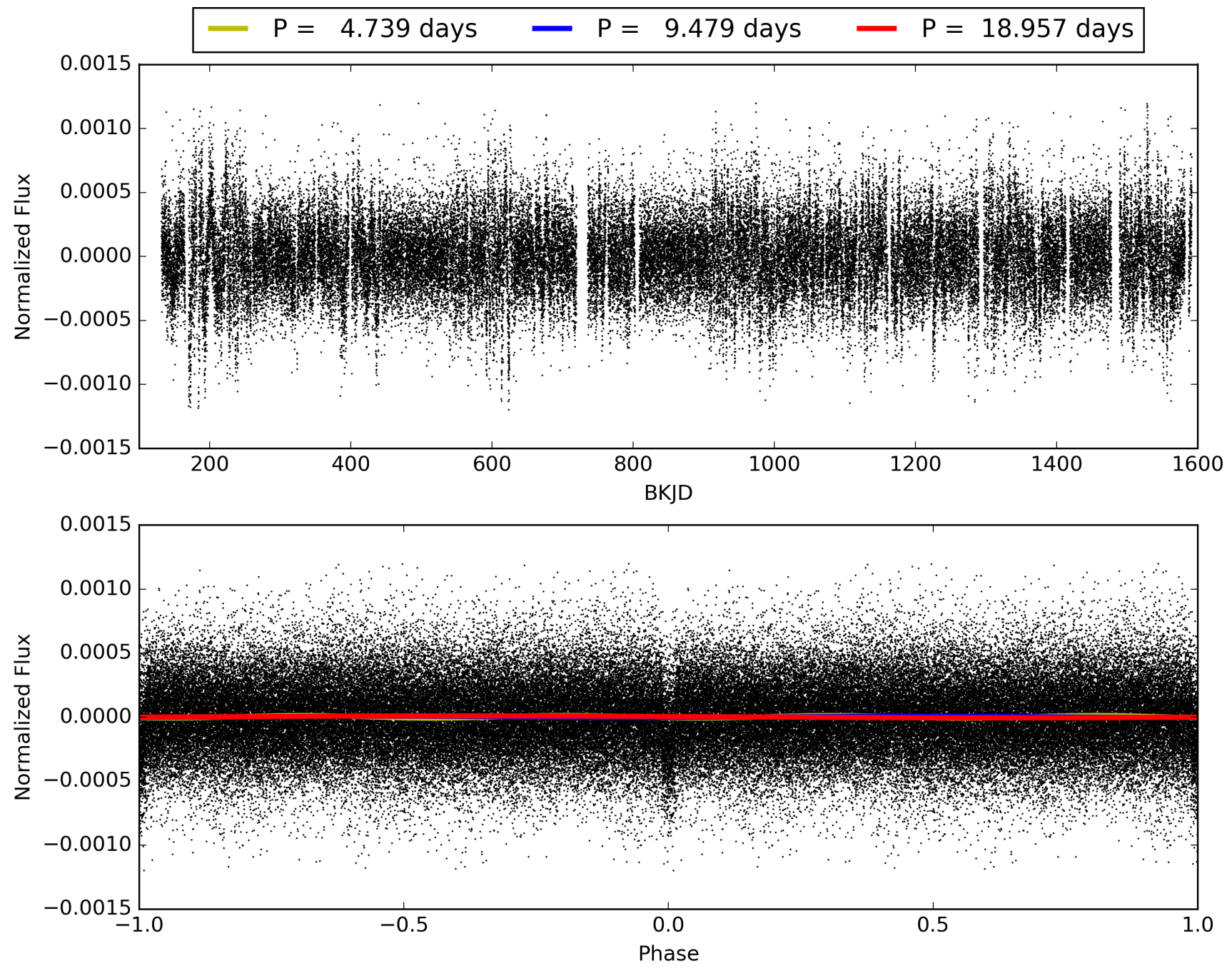
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [14.07 σ]
ModelChiSquare2-sig: 99.4%
ModelChiSquareGoF-sig: 100.0%
Bootstrap-pfa: 5.72e-79
RollingBand-fgt: 0.96 [129/134]
GhostDiagnostic-chr: -24.44
Centroid-sig: 22.8%
Centroid-so: 0.421 arcsec [0.59 σ]
OotOffset-rm: 0.256 arcsec [0.66 σ]
KicOffset-rm: 0.162 arcsec [0.43 σ]
OotOffset-st: 2/4/2/4 [12]
KicOffset-st: 2/4/2/4 [12]
DiffImageQuality-fgm: 1.00 [12/12]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 008613535-02, PDC Light Curves

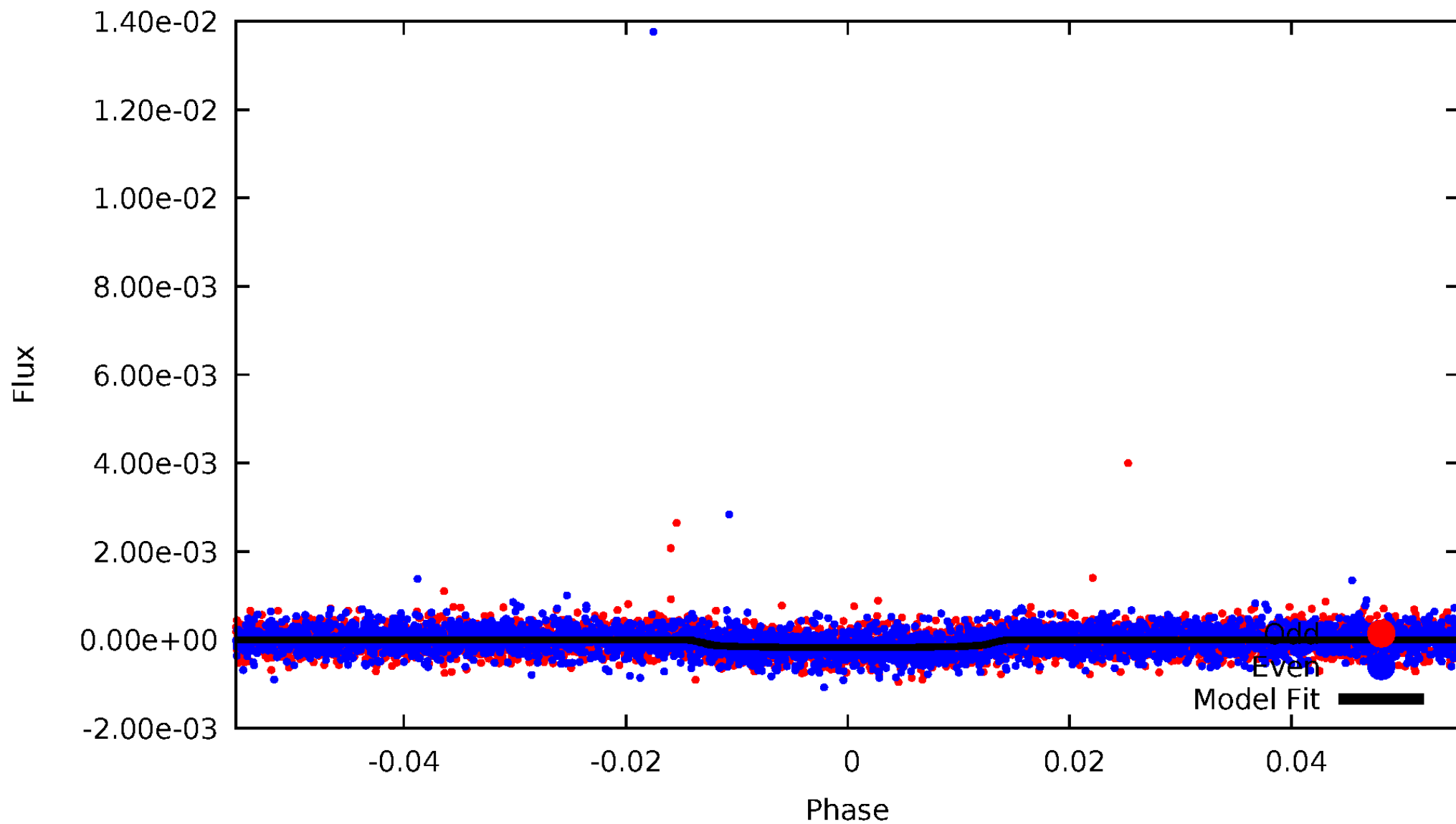


TCE 008613535-02



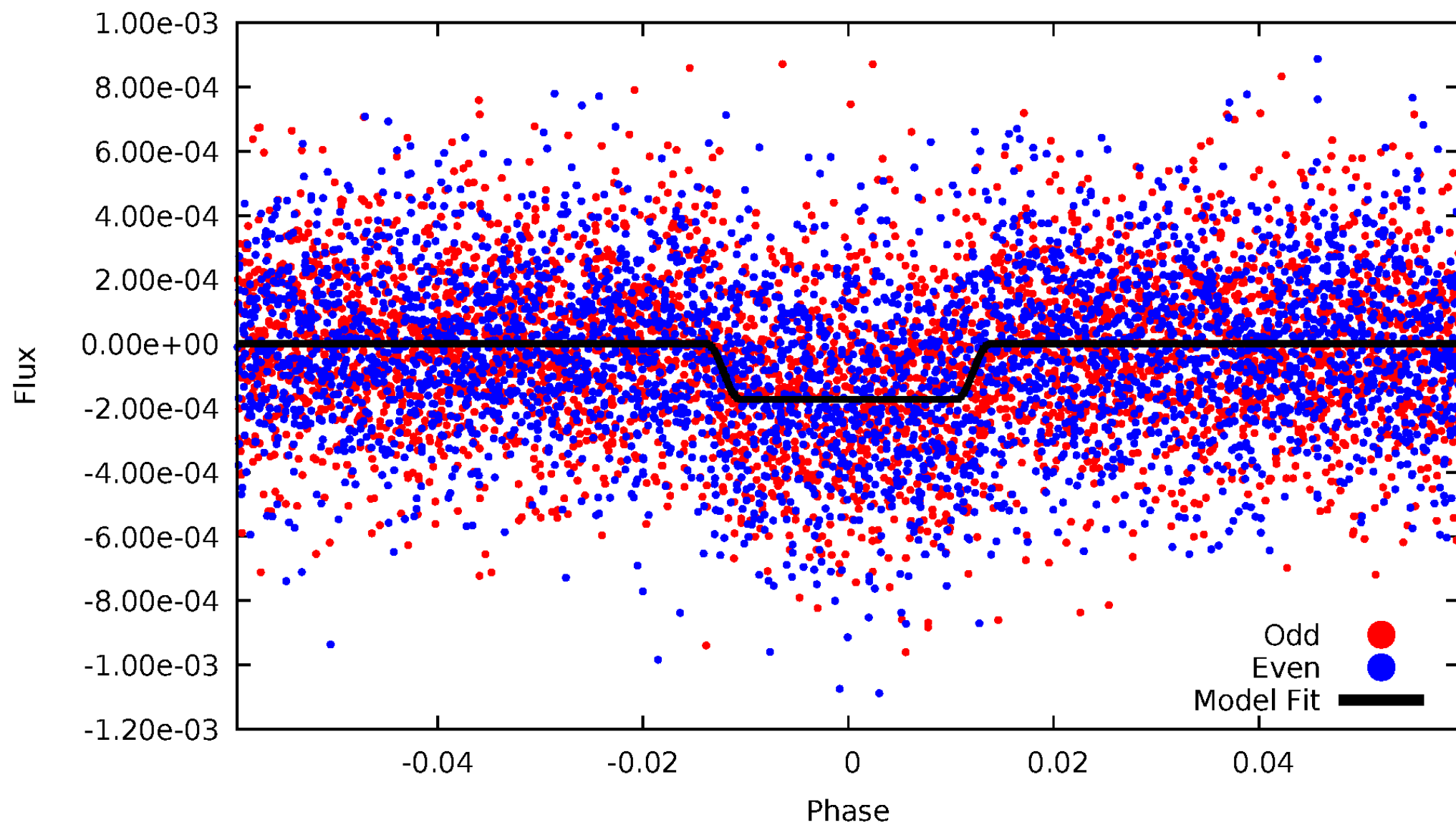
DV Odd/Even

TCE 008613535-02



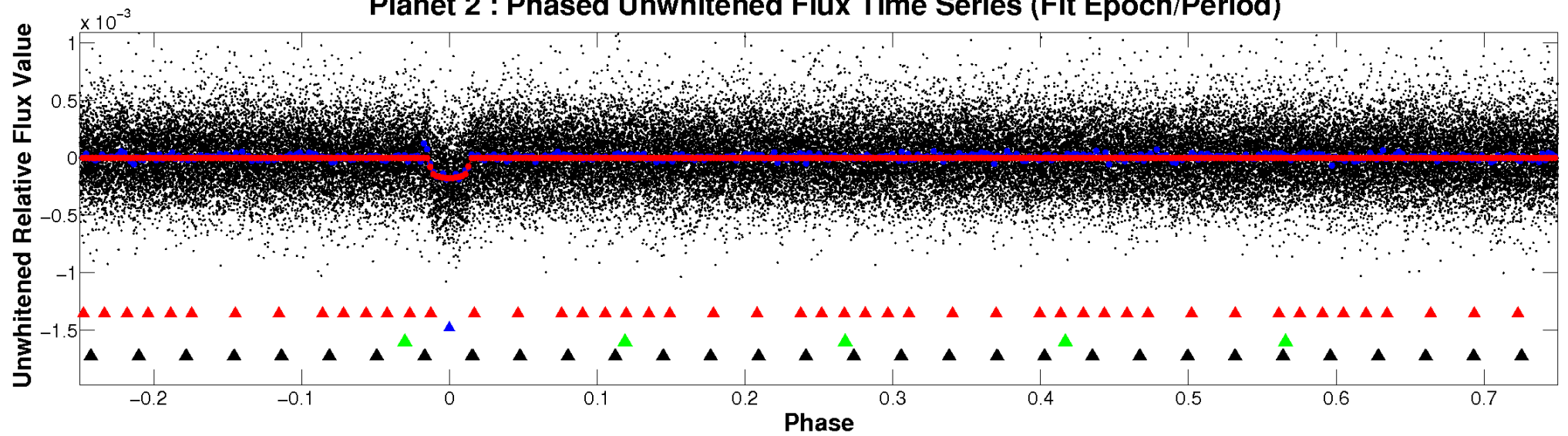
ALT Odd/Even

TCE 008613535-02

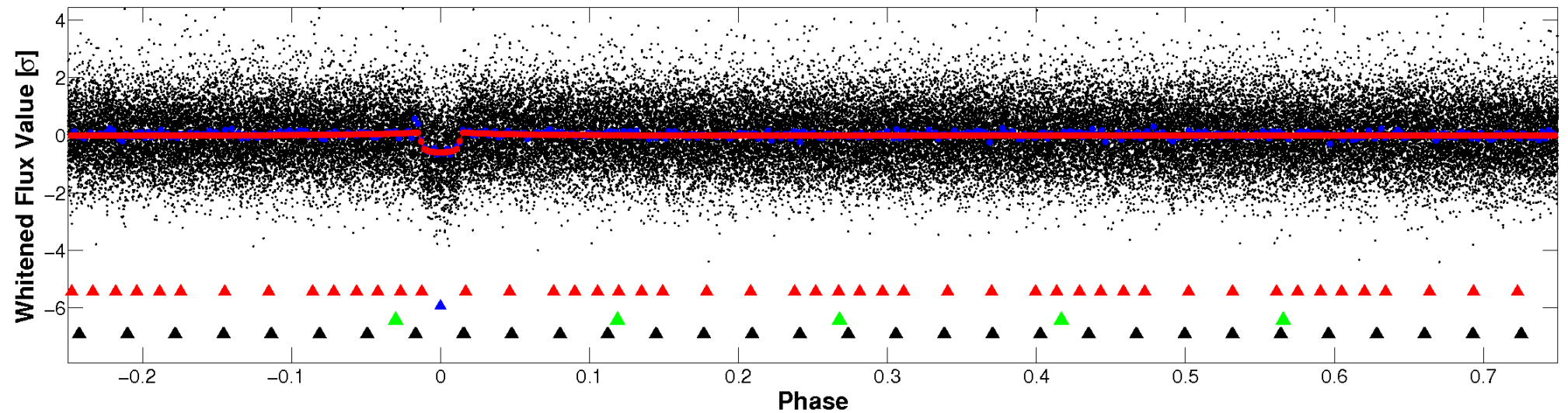


Non-Whitened Vs. Whitened Light Curve

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

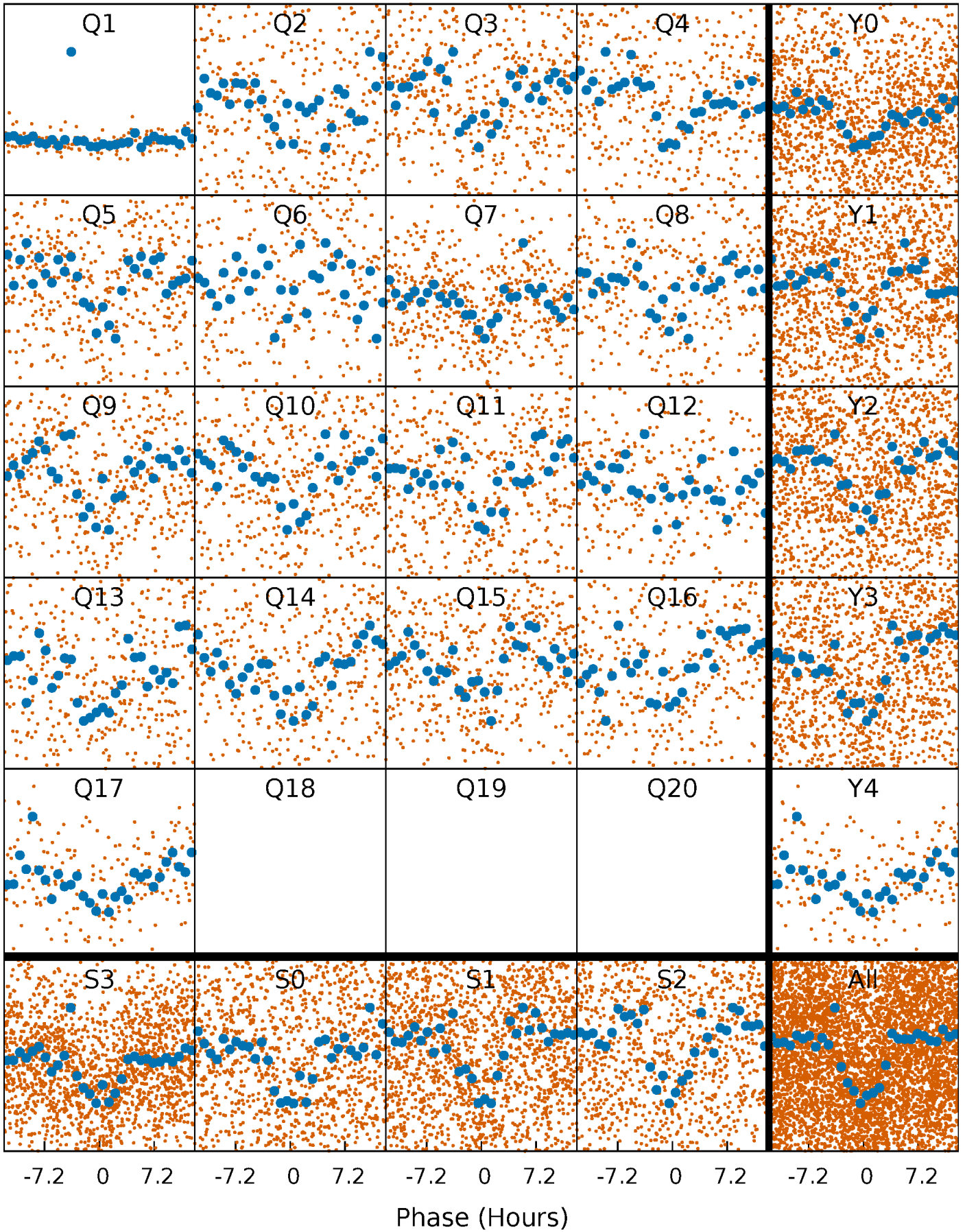


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



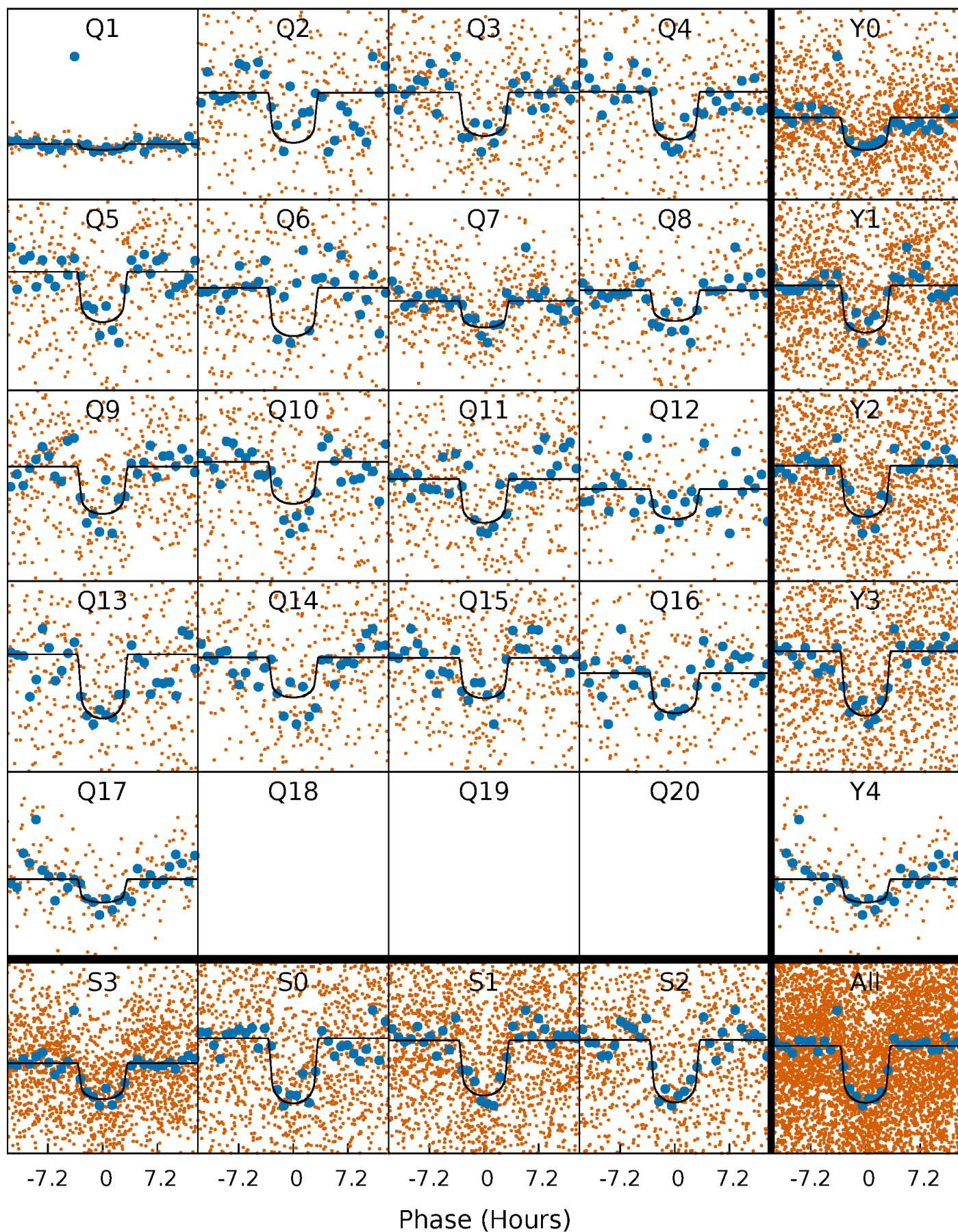
PDC Quarter-Phased Transit Curves

TCE 008613535-02 P= 9.478527 Days $T_0=140.164658$ (BKJD)



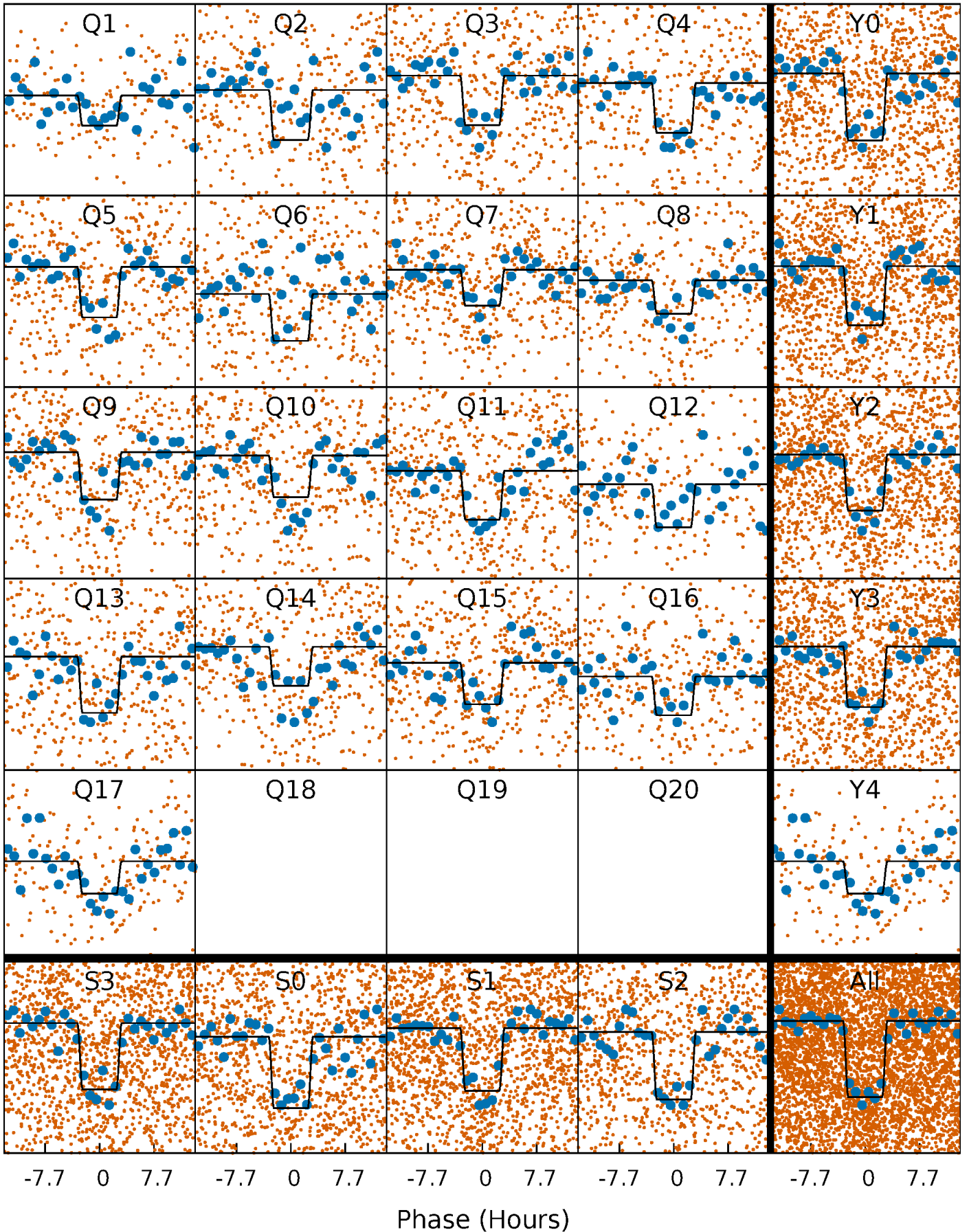
DV Quarter-Phased Transit Curves

TCE 008613535-02 P= 9.478527 Days $T_0=140.164658$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

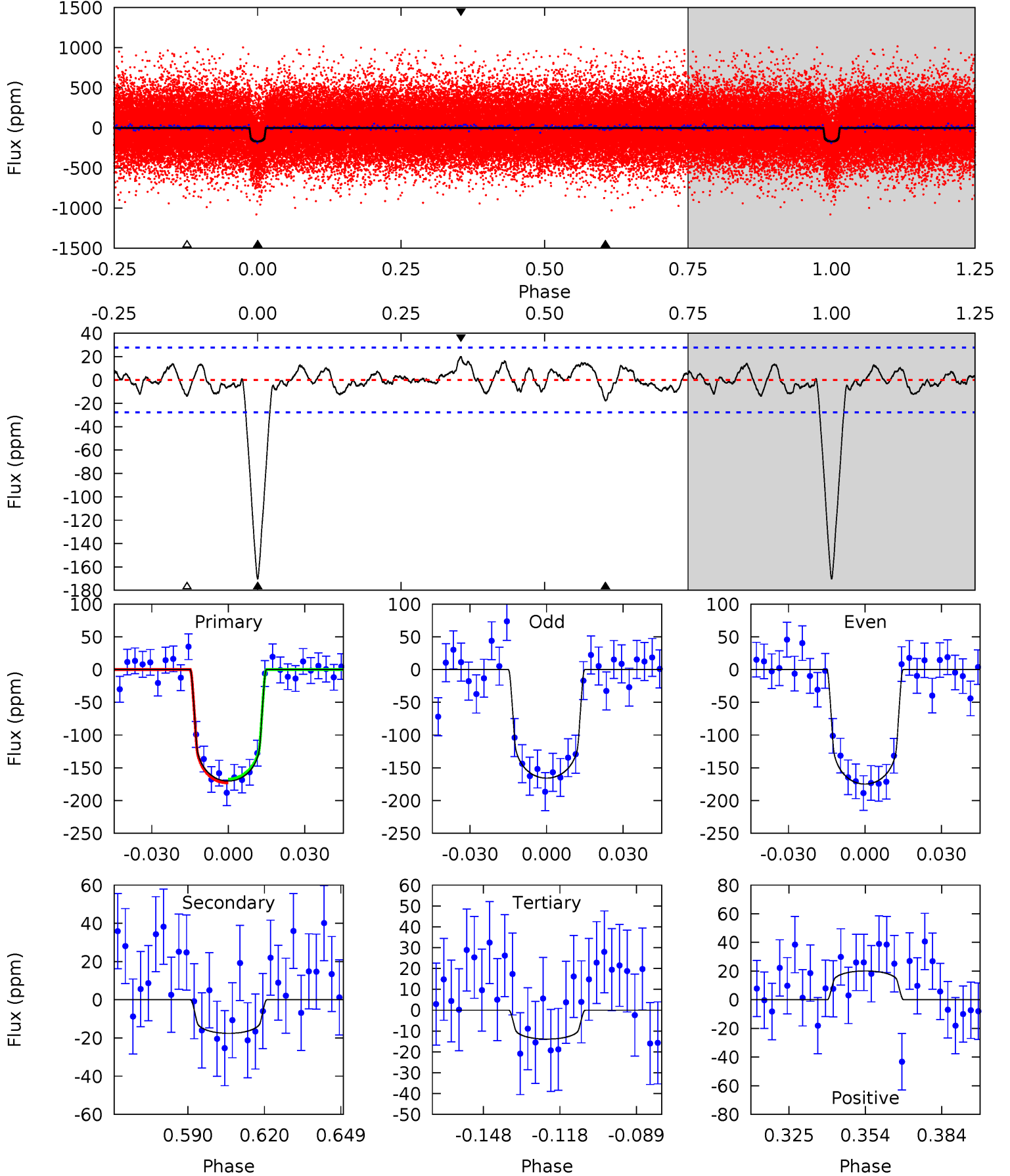
TCE 008613535-02 P= 9.478372 Days $T_0=140.175824$ (BKJD)



DV Model-Shift Uniqueness Test

008613535-02, P = 9.478527 Days, E = 130.686131 Days

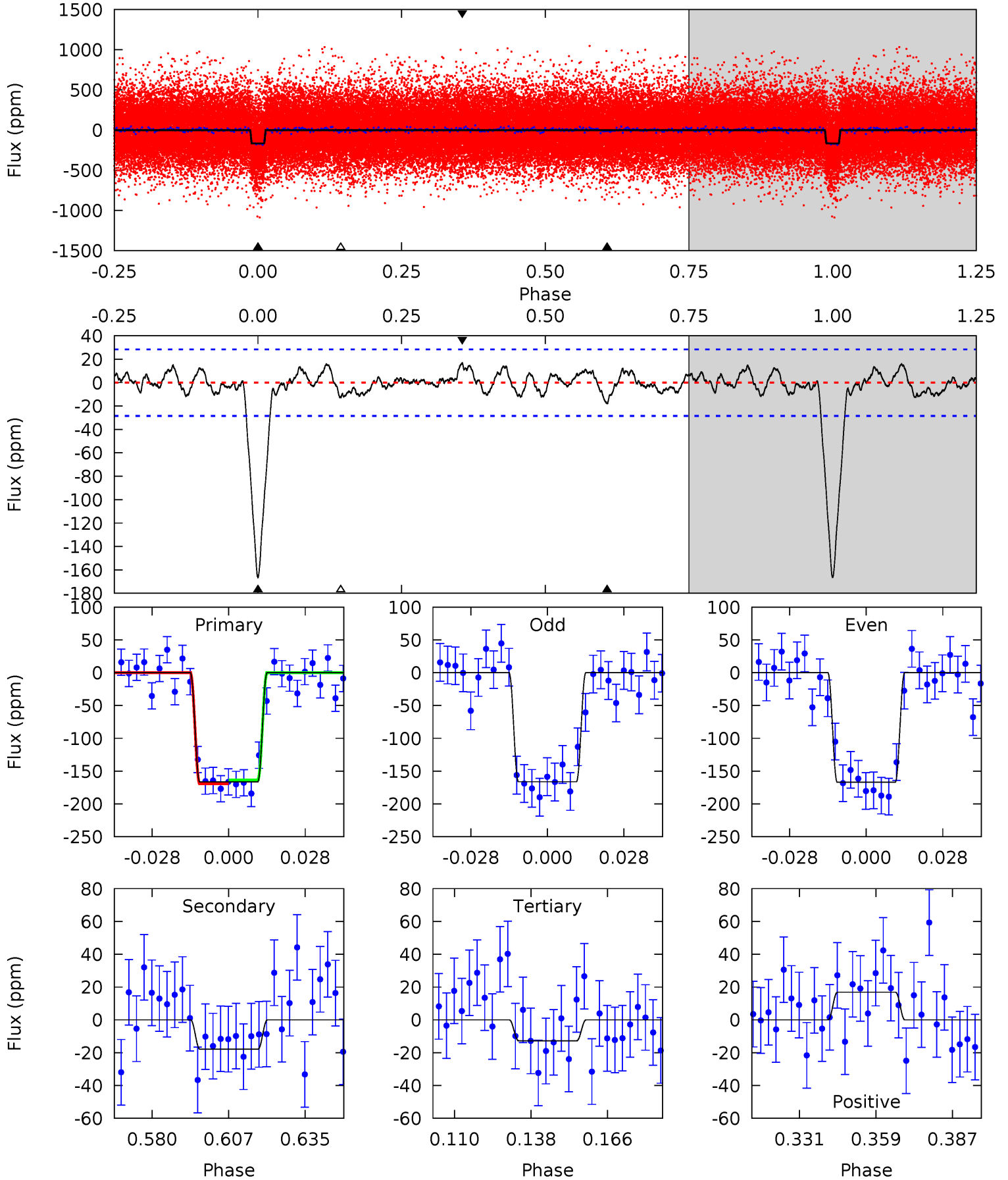
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
29.6	3.05	2.41	3.49	4.81	2.18	1.20	27.2	26.1	0.64	-0.44	0.79	1.07	0.11	0.49



Alt Model-Shift Uniqueness Test

008613535-02, P = 9.478372 Days, E = 130.697452 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
28.3	3.04	2.17	2.87	4.83	2.20	1.12	26.2	25.5	0.87	0.18	0.07	1.02	0.09	0.47



Stellar Parameters For KIC 008613535

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6249^{+174}_{-217}	$4.428^{+0.054}_{-0.202}$	$-0.040^{+0.250}_{-0.300}$	$1.076^{+0.335}_{-0.112}$	$1.130^{+0.159}_{-0.159}$	$1.279^{+0.356}_{-0.665}$
	+3%/-3%	+1%/-5%	+625%/-750%	+31%/-10%	+14%/-14%	+28%/-52%
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 008613535-02 / KOI 2263.02

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-18 ± 6	$1.67^{+0.46}_{-0.41}$	1348^{+95}_{-63}	3815^{+443}_{-347}	27^{+26}_{-12}
Alt.	-18 ± 6	$1.61^{+0.45}_{-0.44}$	1343^{+89}_{-64}	3882^{+458}_{-383}	31^{+30}_{-14}

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 $A_{obs} \gg 1.0$

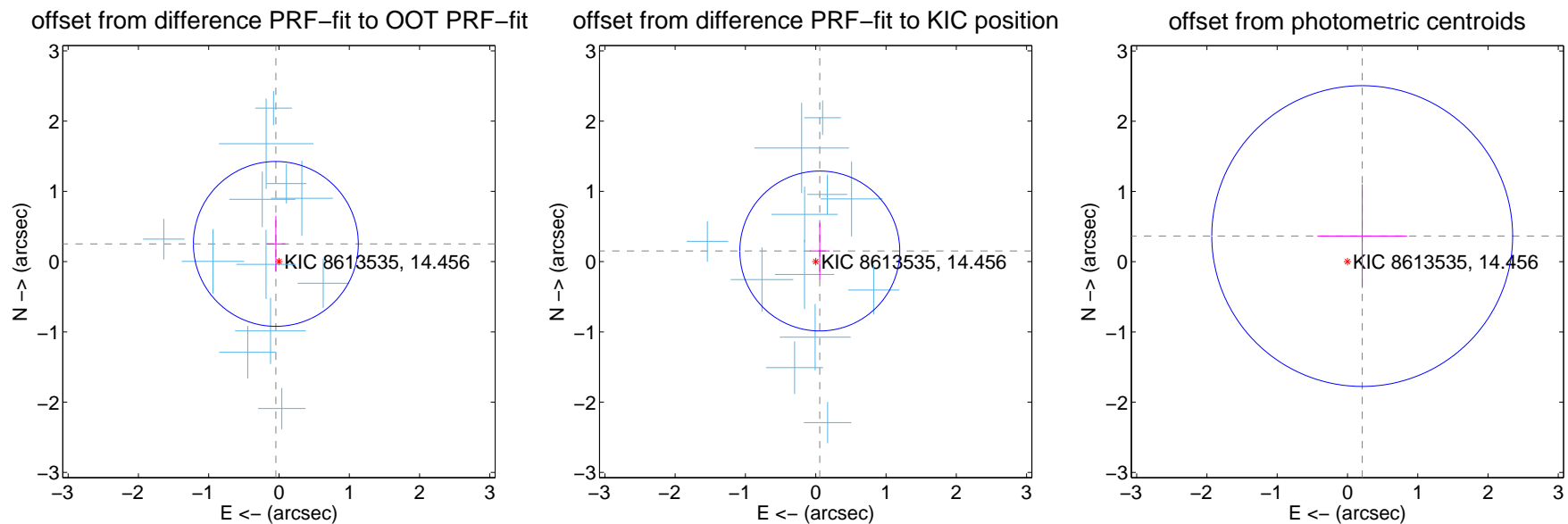
DV Centroid Data

Supplemental centroid analysis for 008613535-02. Kepler magnitude: 14.46. Transit SNR 21.78

There are 12 quarters with good PRF difference image offsets

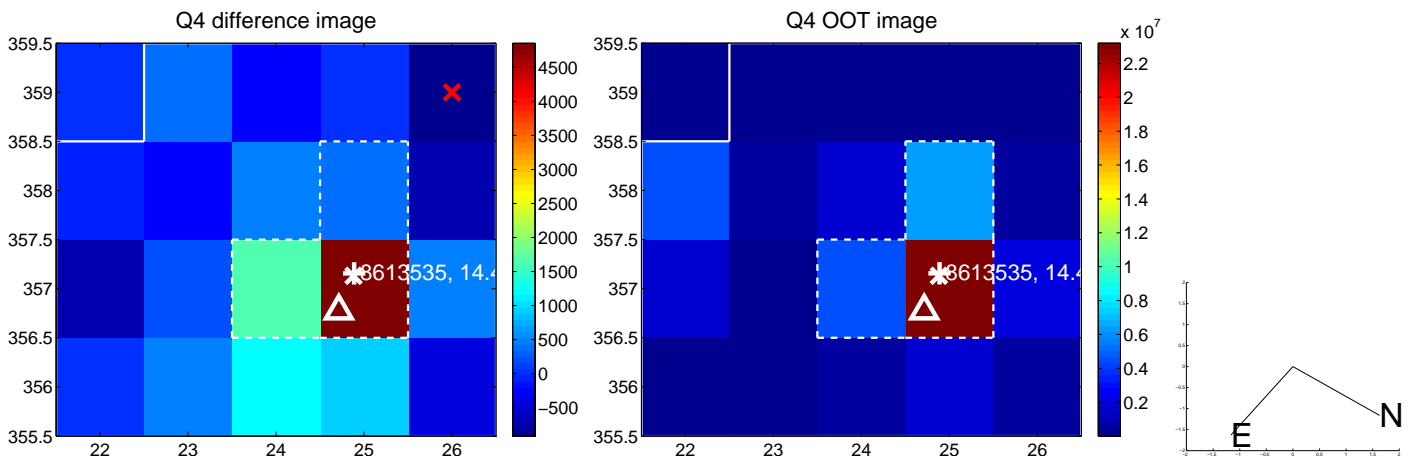
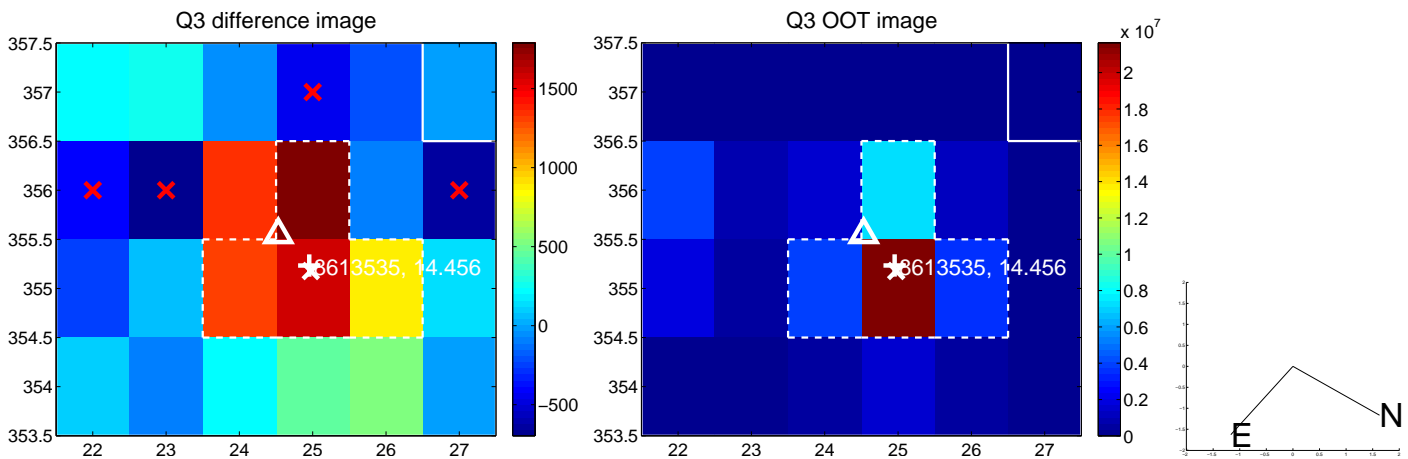
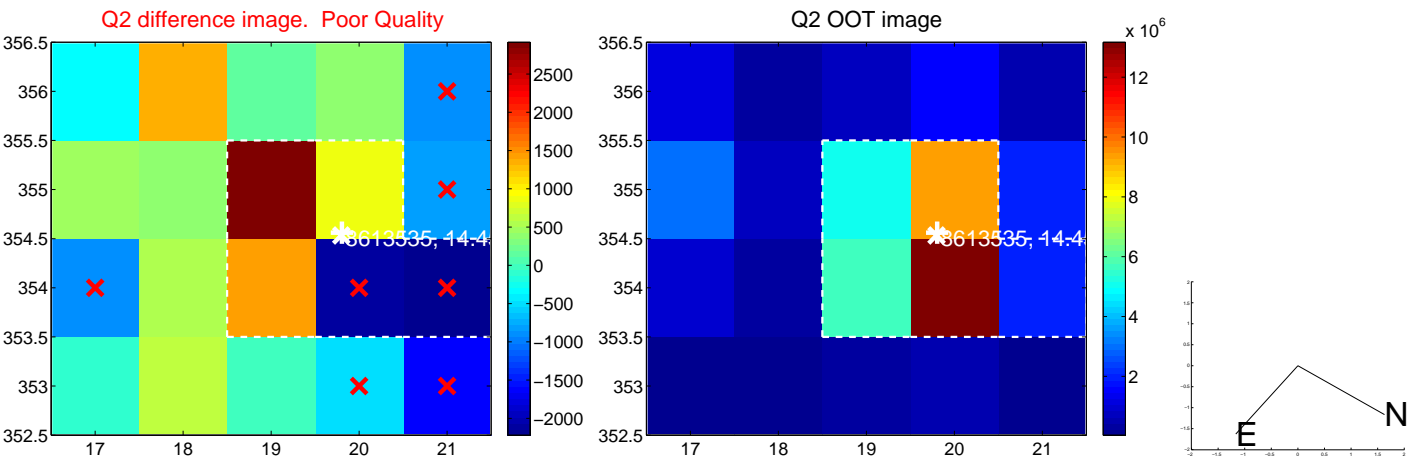
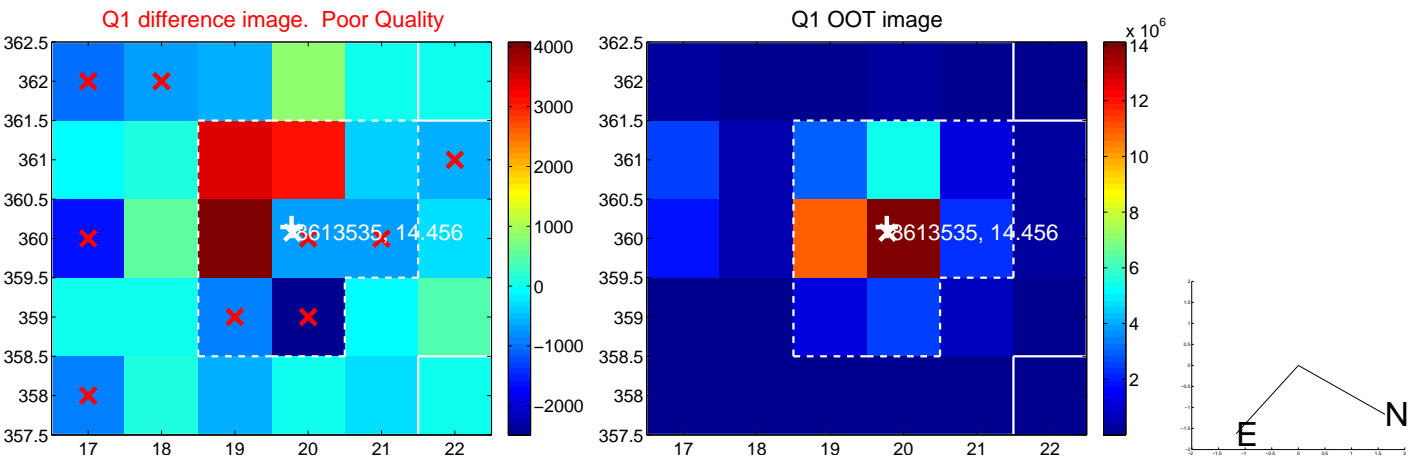
The direct PRF centroid is offset from the target star catalog position by about 0.22 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.256 ± 0.391	0.66	0.045 ± 0.135	0.252 ± 0.396
PRF-fit source offset from KIC position	0.162 ± 0.379	0.43	-0.058 ± 0.141	0.151 ± 0.402
photometric centroid source offset	0.42 ± 0.71	0.59	-0.21 ± 0.64	0.37 ± 0.74

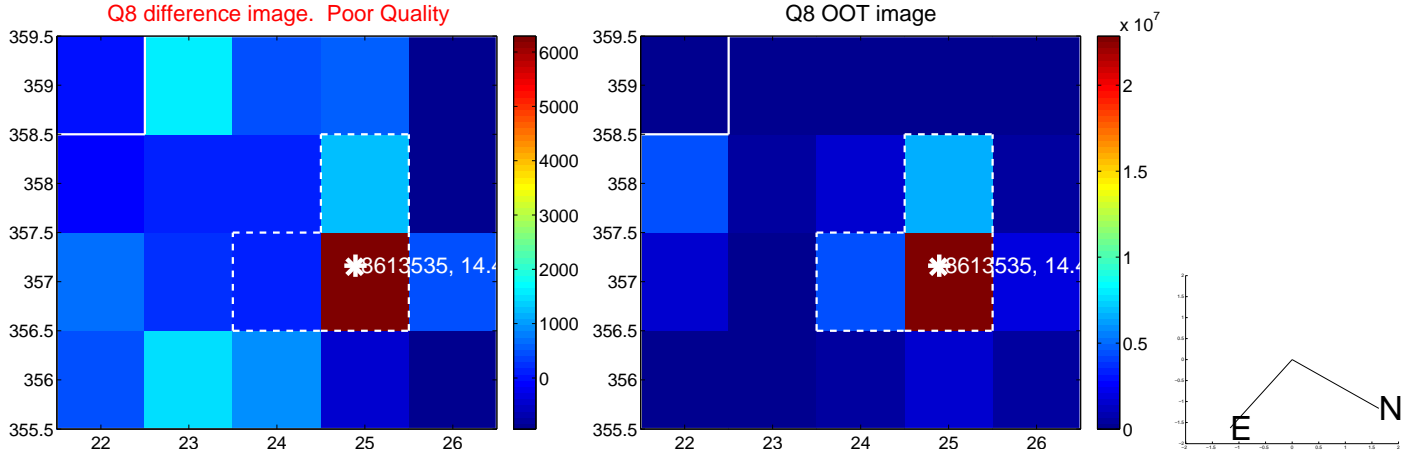
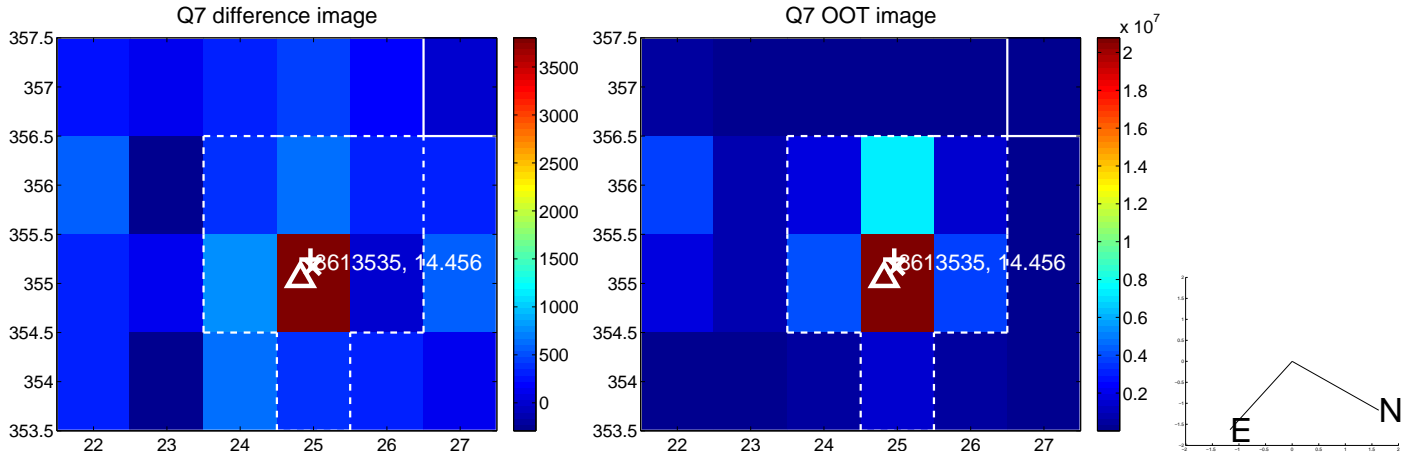
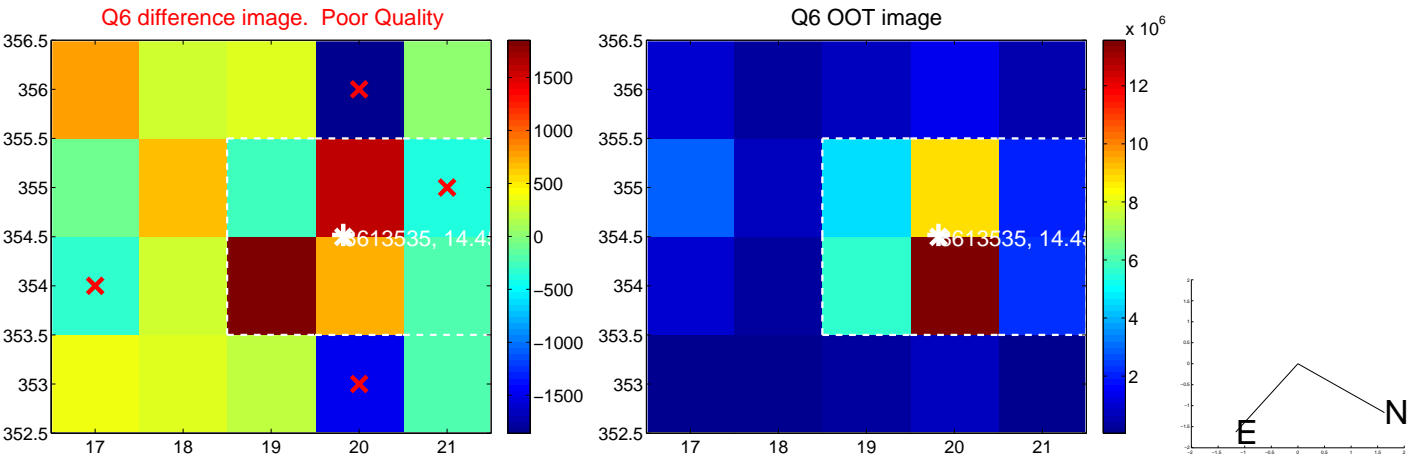
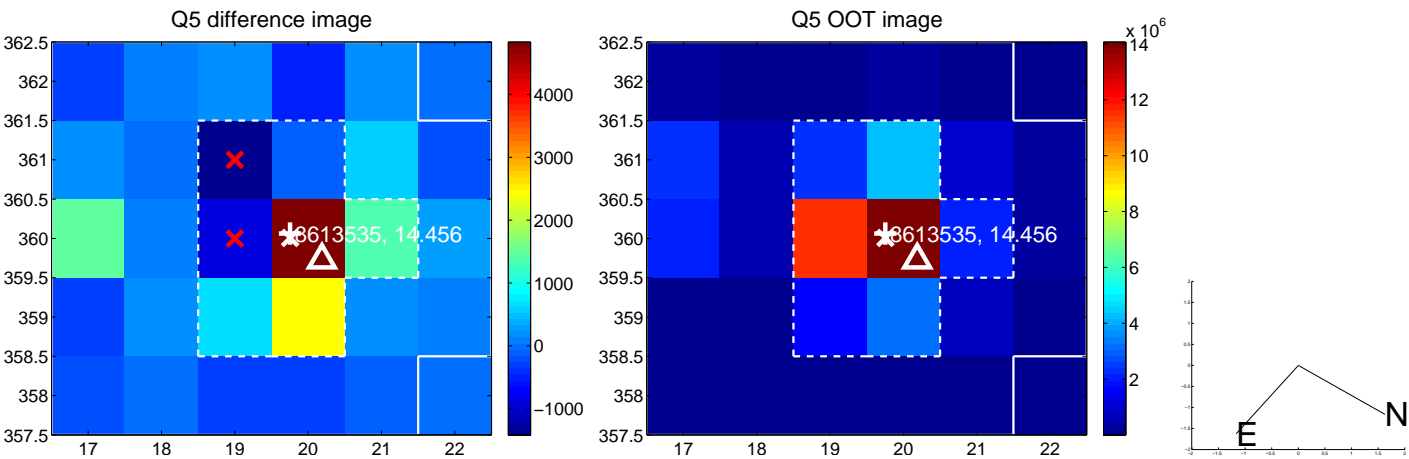


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

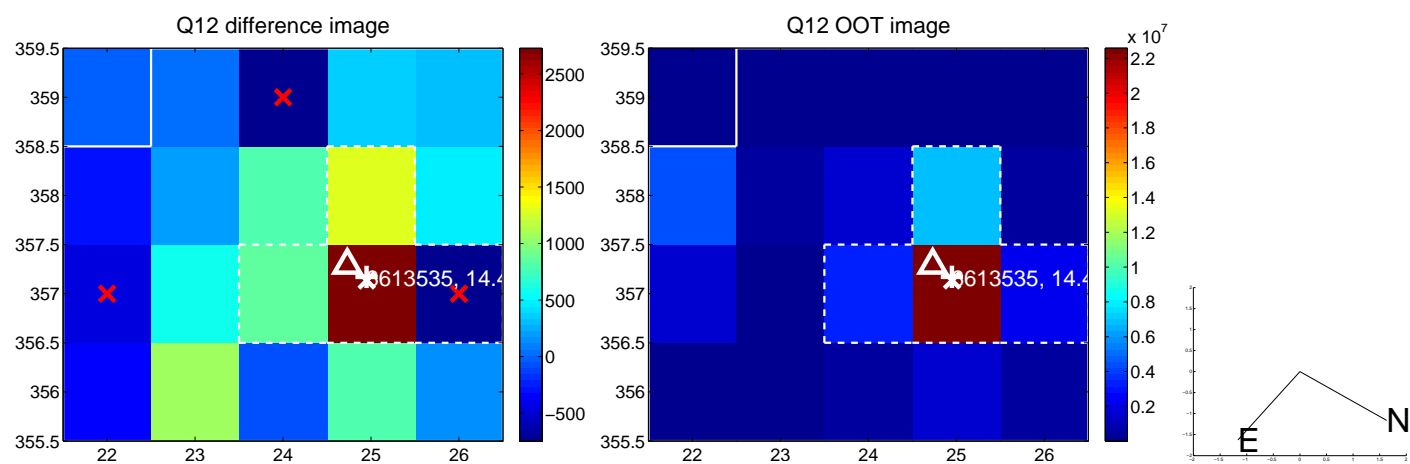
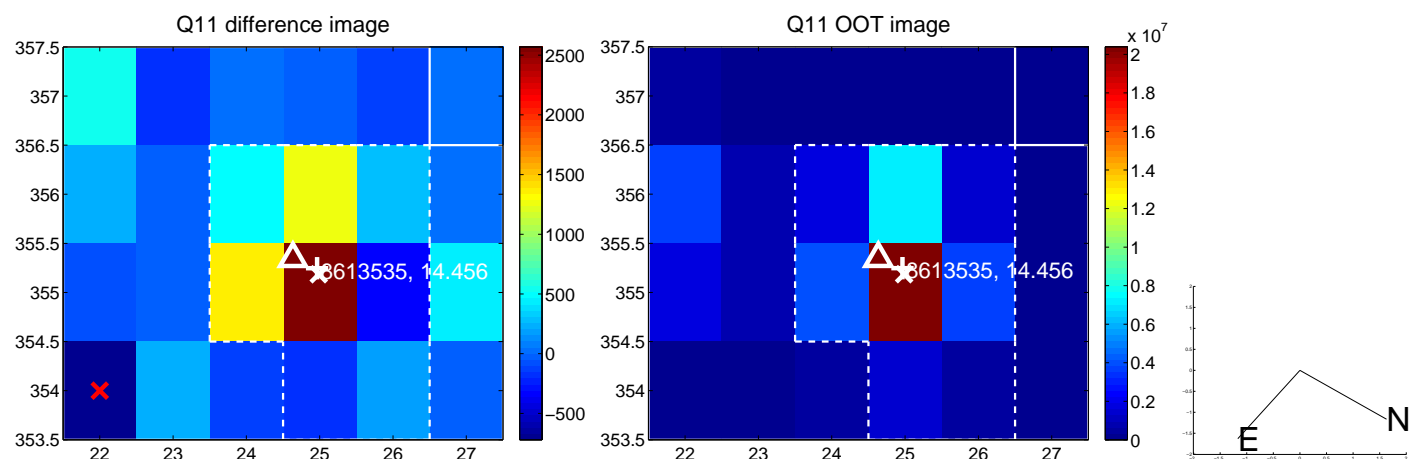
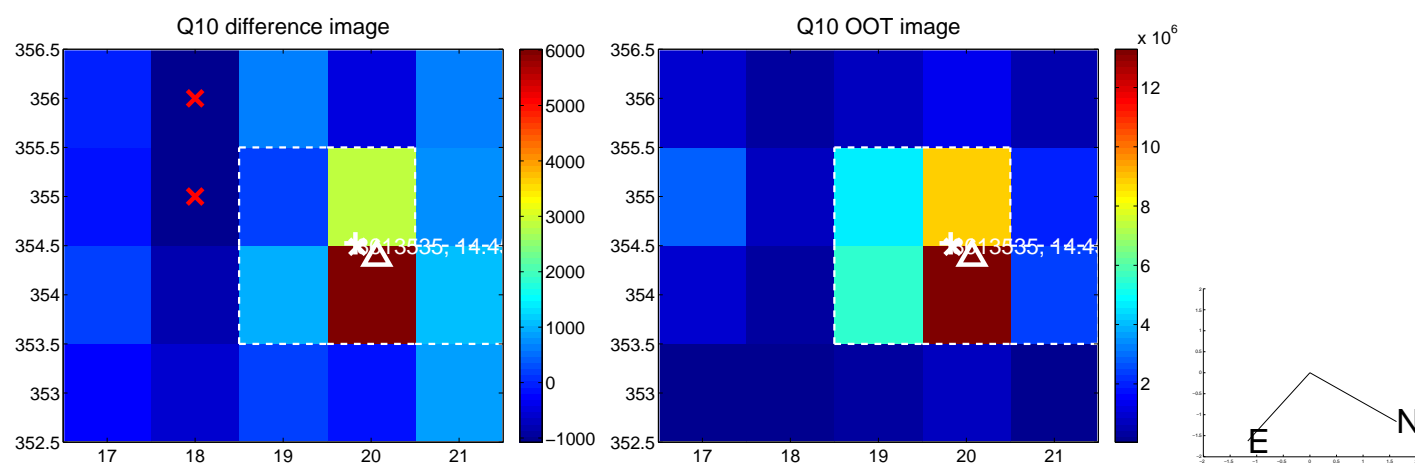
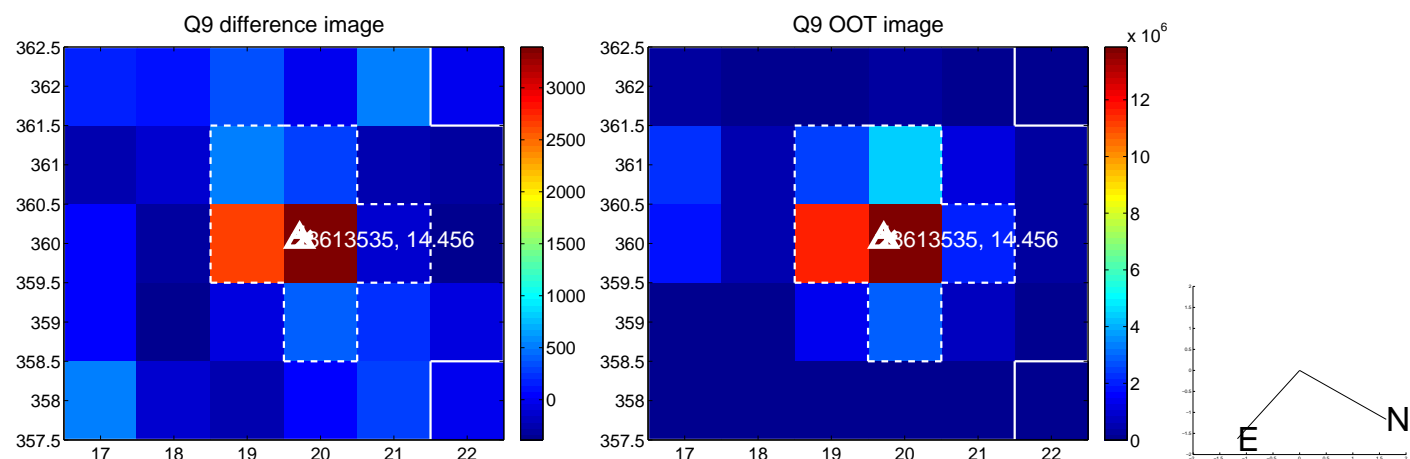
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



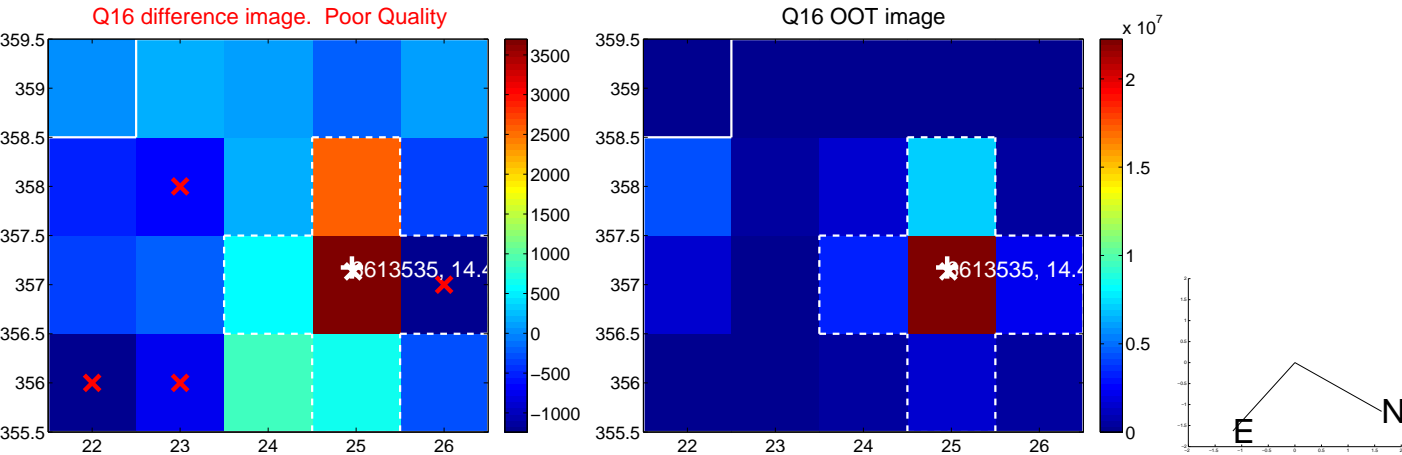
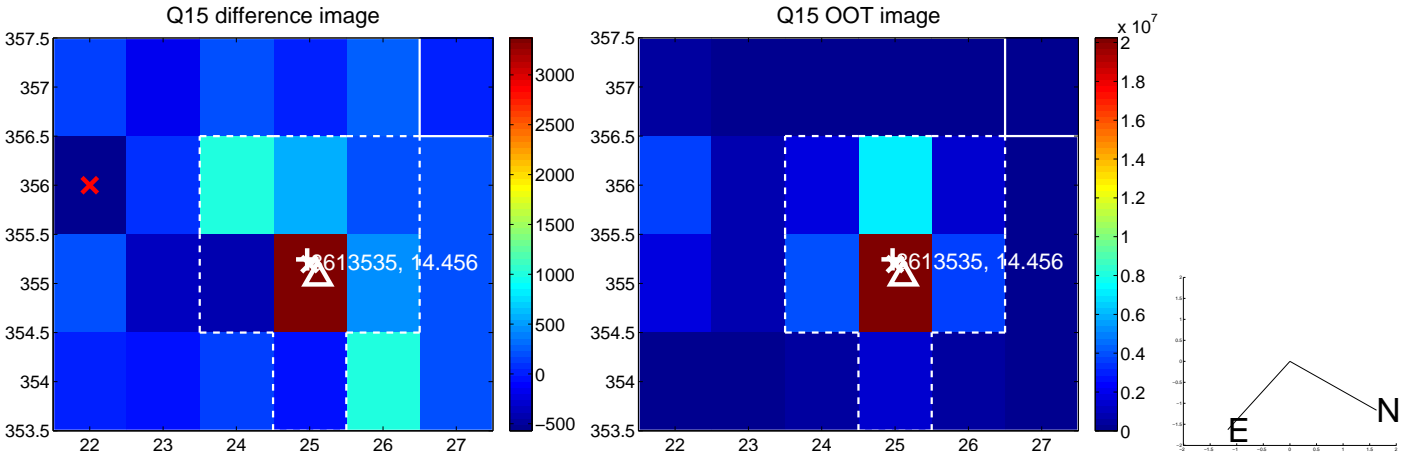
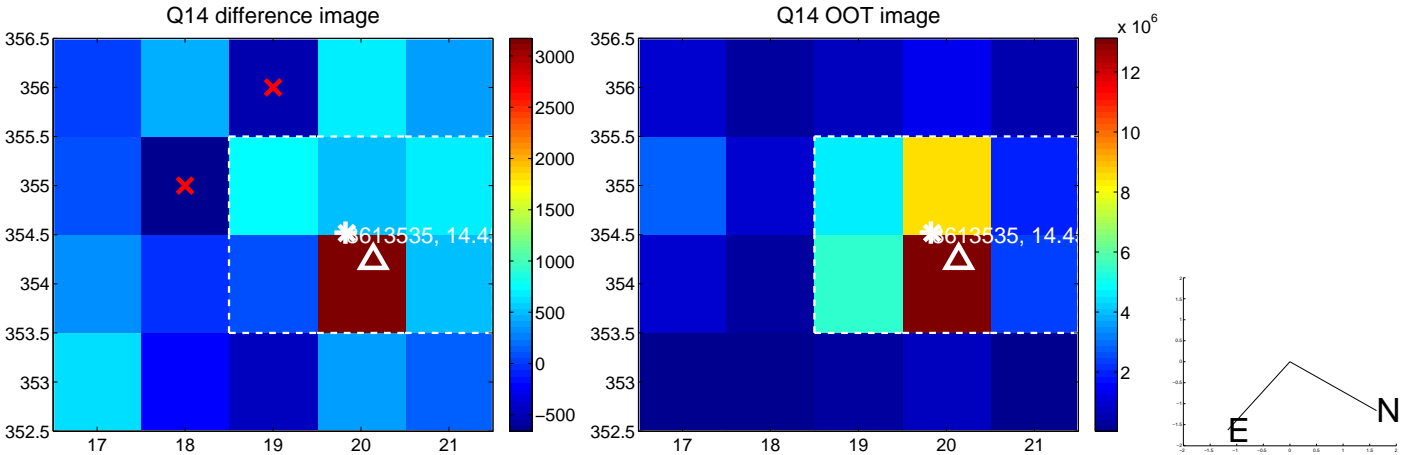
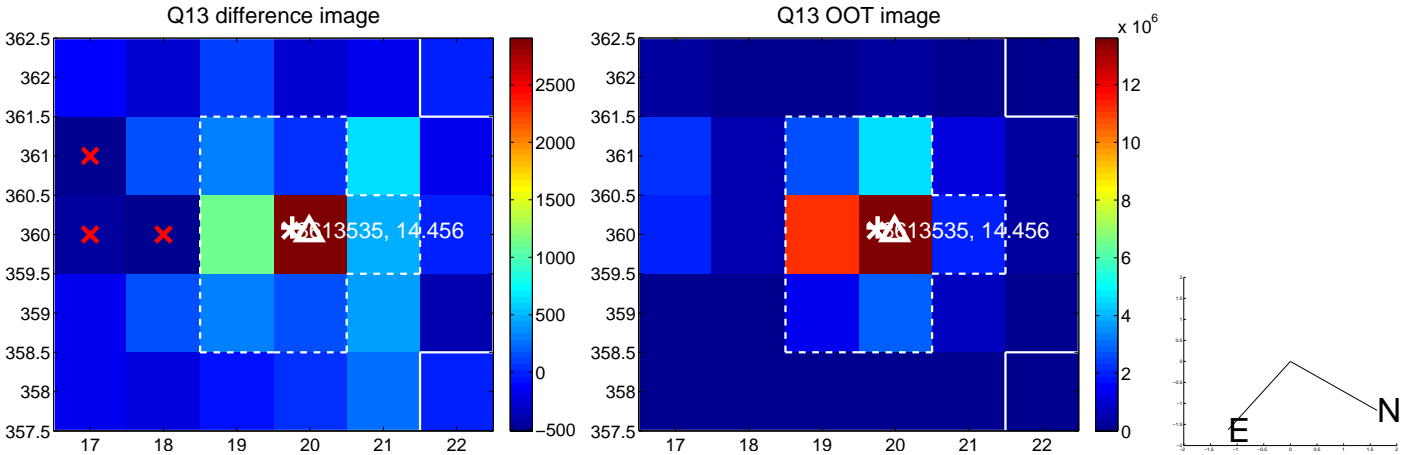
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



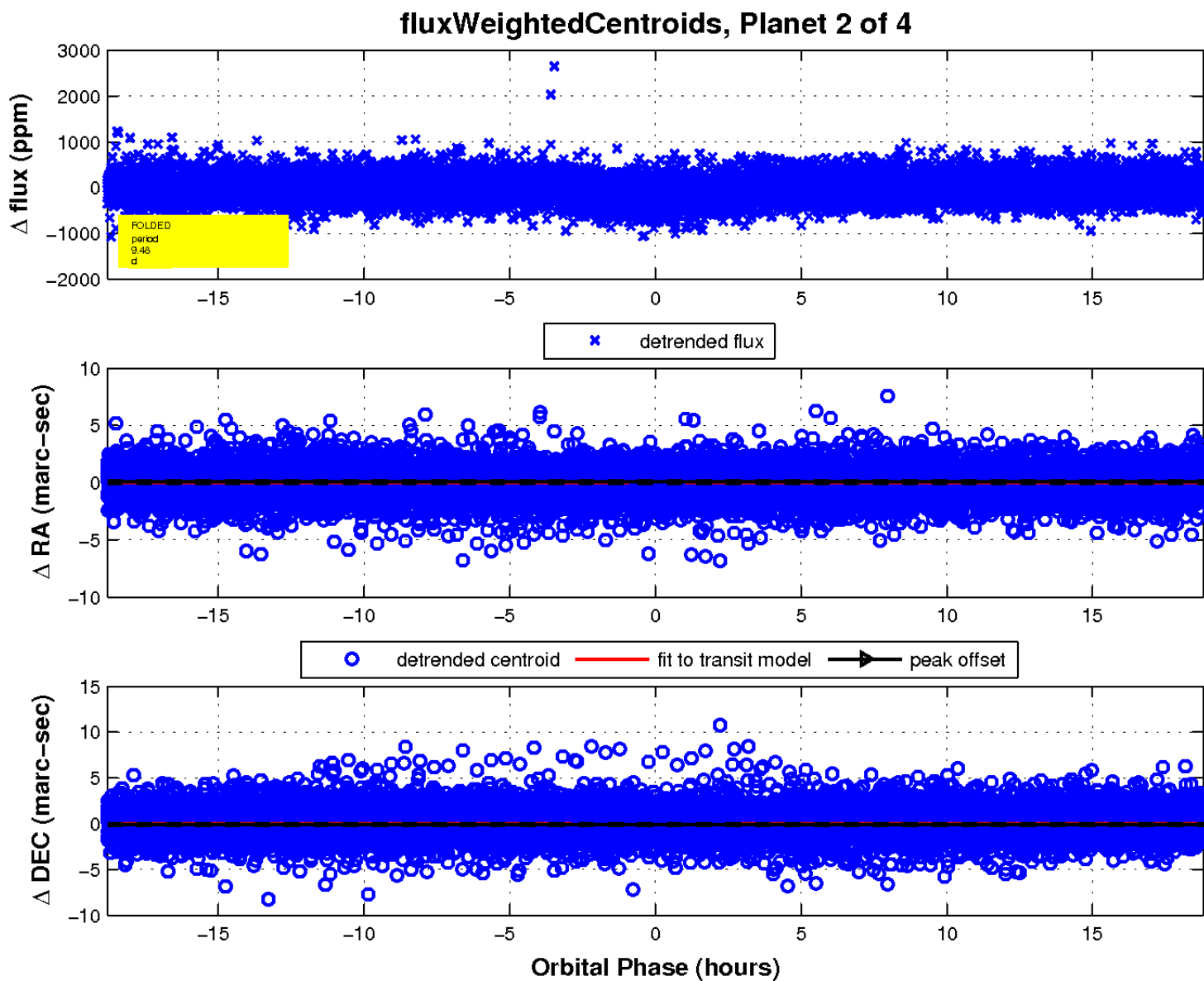
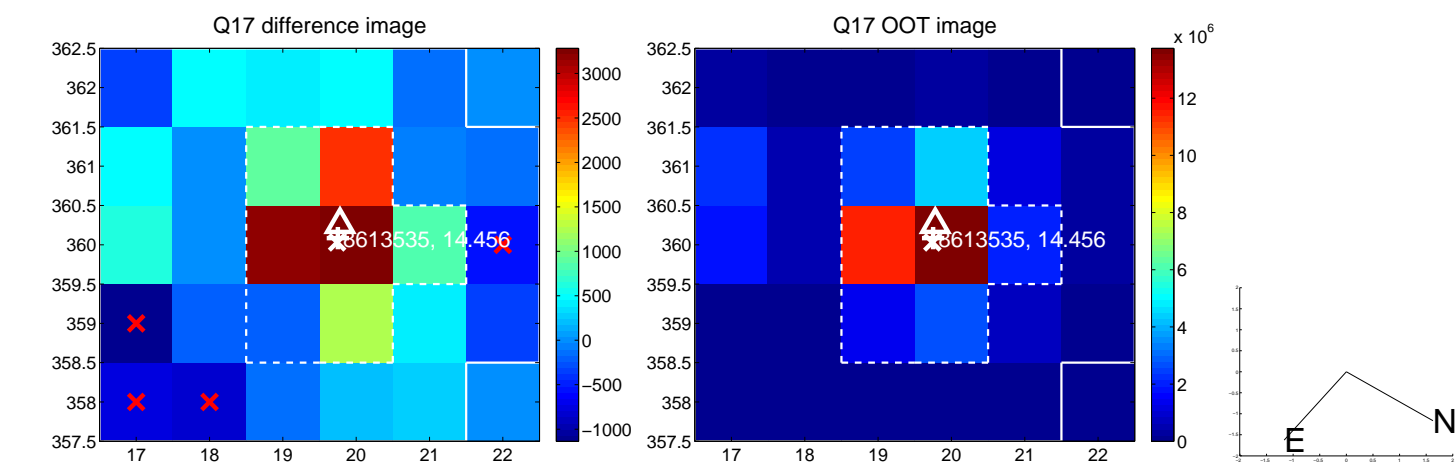
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



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

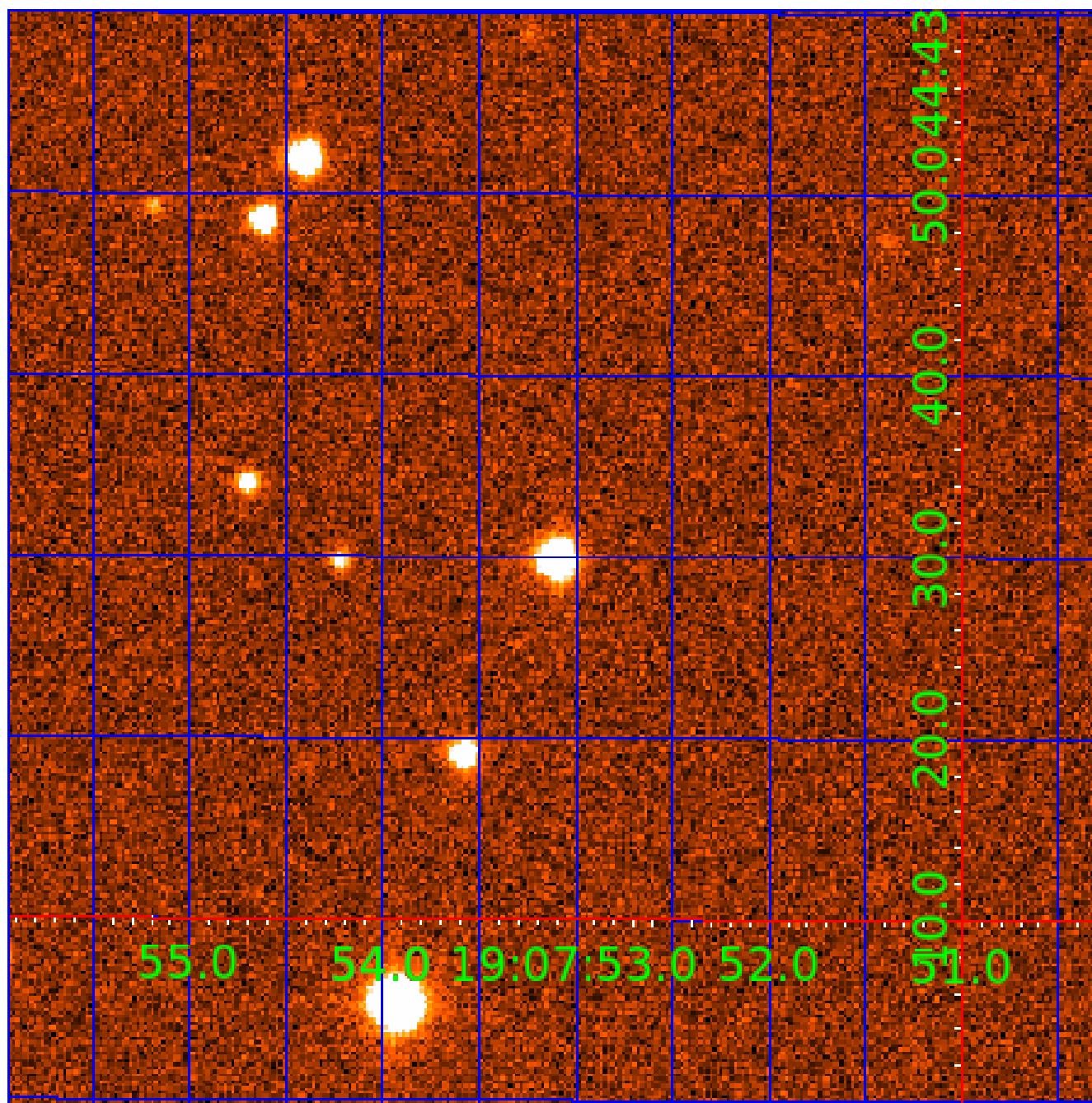


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008613535

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})
008613535-01	OBS	2263.01	29.968709	147.856477	315.9	6.905	19.8	22.3	1.08	6249	2.13	40.84
008613535-02	OBS	2263.02	9.478527	140.164658	176.2	6.270	20.0	21.8	1.08	6249	1.58	189.53
008613535-03	OBS	No	304.724764	310.492870	389.3	15.931	10.3	9.6	1.08	6249	2.37	1.85
008613535-04	OBS	2263.03	15.593828	140.306631	87.9	8.335	8.4	9.0	1.08	6249	1.15	97.59

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008613535-01	OBS	PC	0.96	0	0	0	0	NO_COMMENT
008613535-02	OBS	PC	1.00	0	0	0	0	NO_COMMENT
008613535-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008613535-04	OBS	PC	0.55	0	0	0	0	CENT_FEW_MEAS

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.

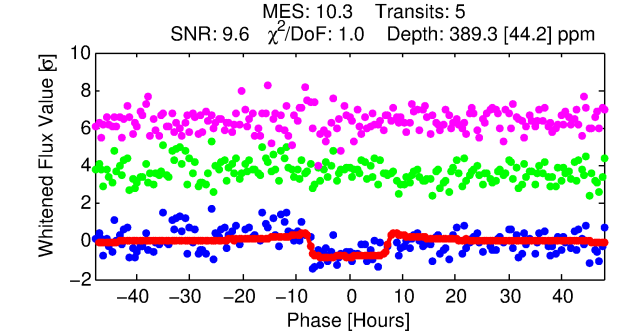
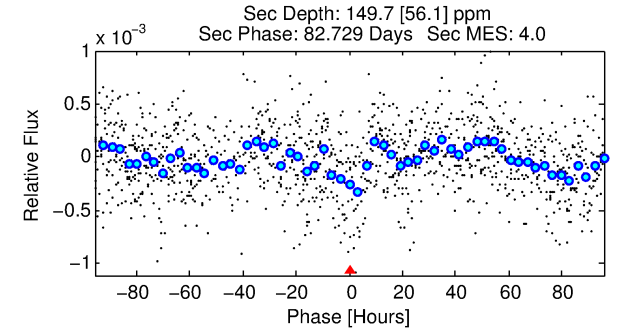
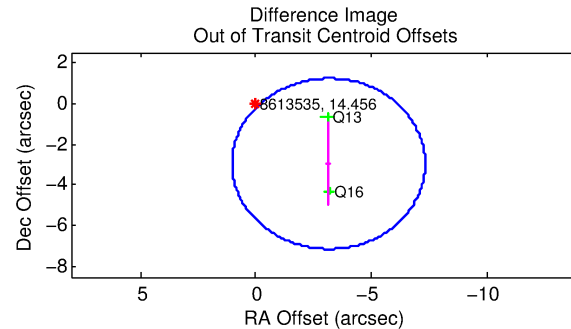
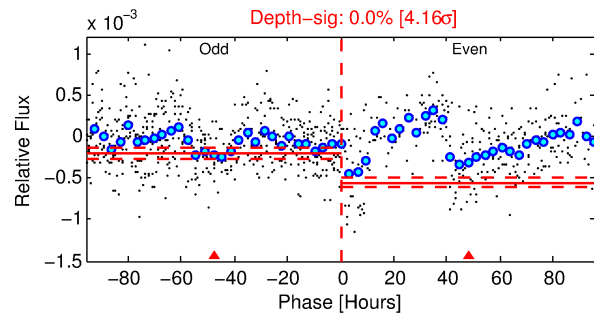
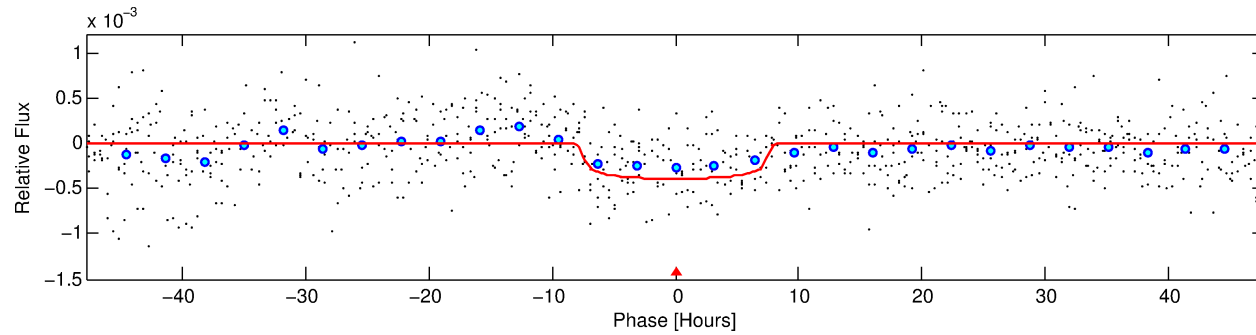
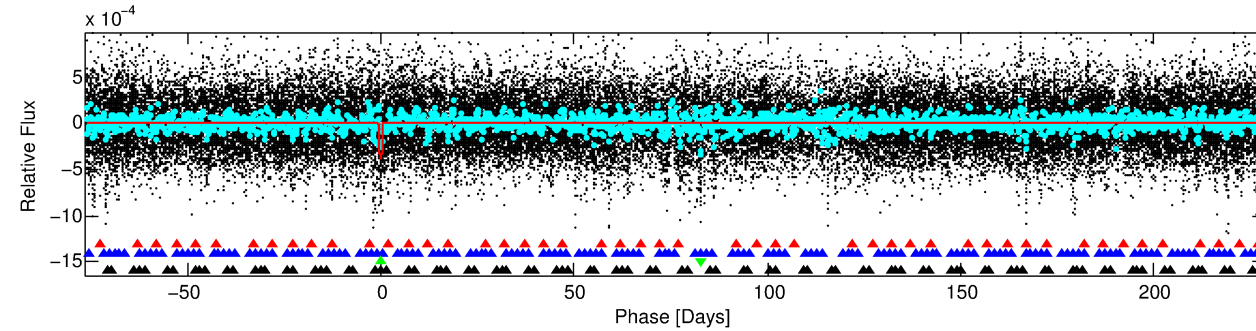
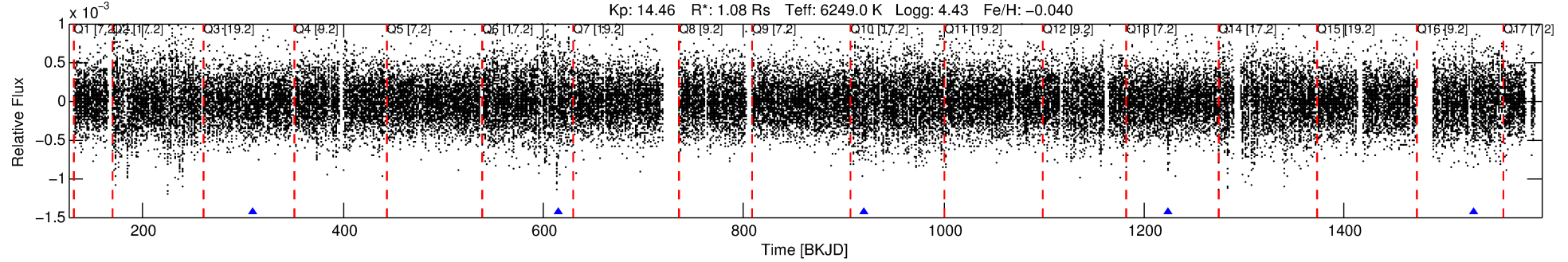
Ephemeris Match Information For 008613535-03

No Significant Match Found

DV One-Page Summary

KIC: 8613535 Candidate: 3 of 4 Period: 304.725 d
KOI: K02263 Corr: No Ephemeris Match

Kp: 14.46 R*: 1.08 Rs Teff: 6249.0 K Logg: 4.43 Fe/H: -0.040



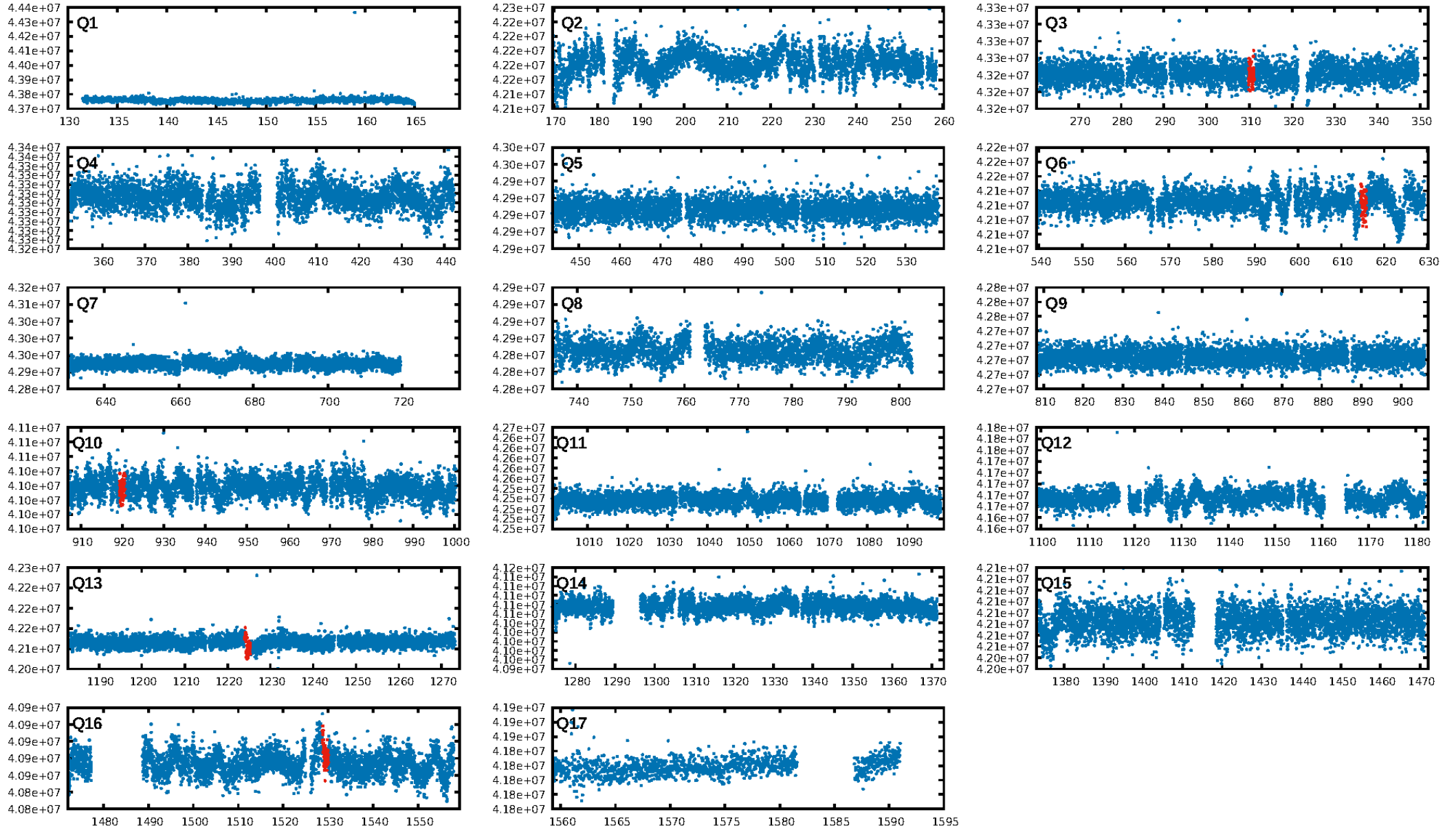
DV Fit Results:

Period = 304.72476 [0.00805] d
Epoch = 310.4929 [0.0212] BKJD
Rp/R* = 0.0202 [0.0032]
a/R* = 88.78 [66.68]
b = 0.82 [0.30]
Seff = 1.85 [0.74]
Teq = 298 [30] K
Rp = 2.37 [0.83] Re
a = 0.9237 [0.2393] AU
Ag = 12524.84 [7722.39] [1.62σ]
Teffp = 4867 [621] K [7.35σ]

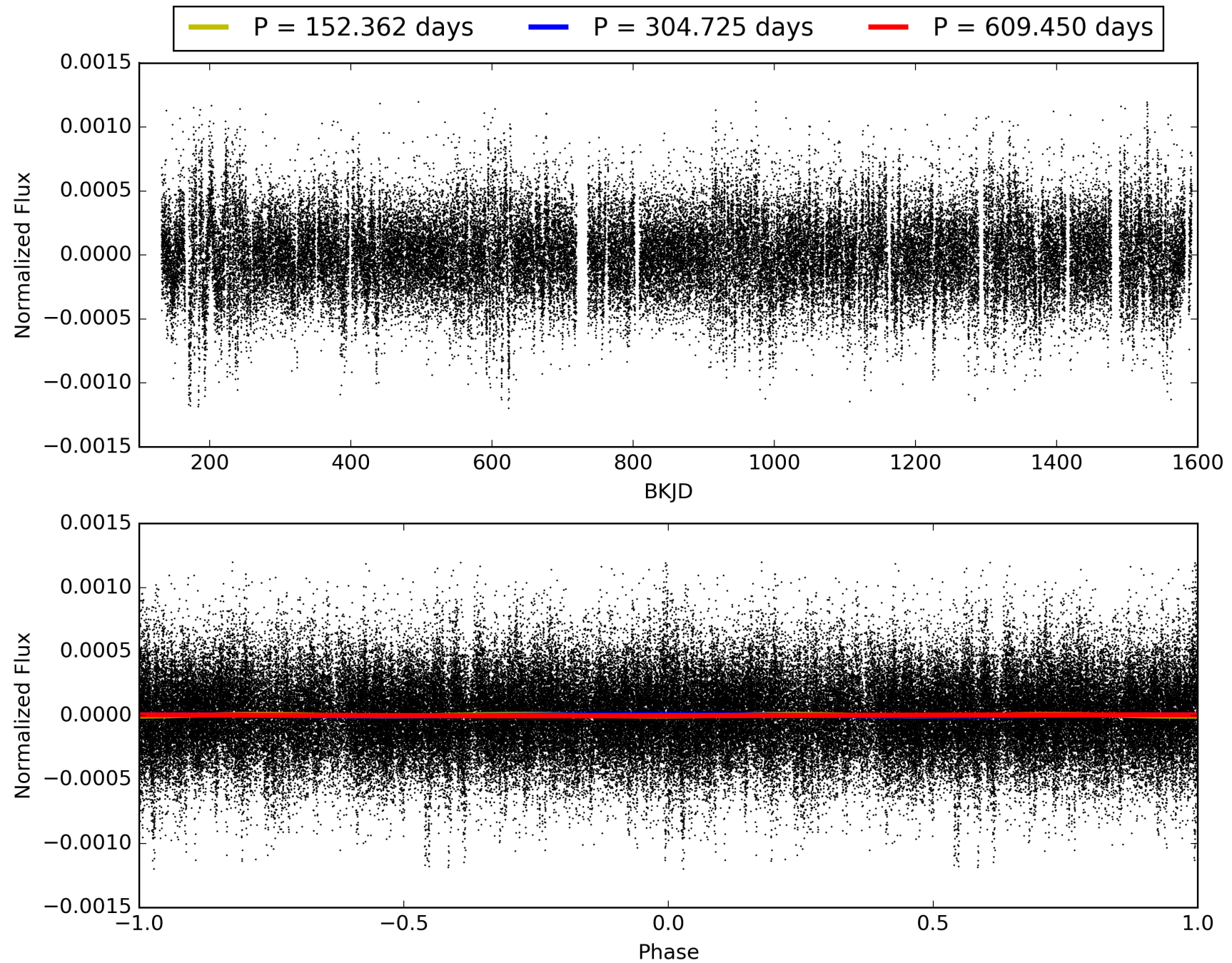
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [379.79σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 2.30e-12
RollingBand-fgt: 1.00 [5/5]
GhostDiagnostic-chr: -63.83
Centroid-sig: 8.0%
Centroid-so: 1.576 arcsec [1.06σ]
OotOffset-rm: 4.309 arcsec [3.09σ]
KicOffset-rm: 4.460 arcsec [3.11σ]
OotOffset-st: 0/0/1/1 [2]
KicOffset-st: 0/0/1/1 [2]
DiffImageQuality-fgm: 0.50 [1/2]
DiffImageOverlap-fno: 0.20 [1/5]

TCE 008613535-03, PDC Light Curves

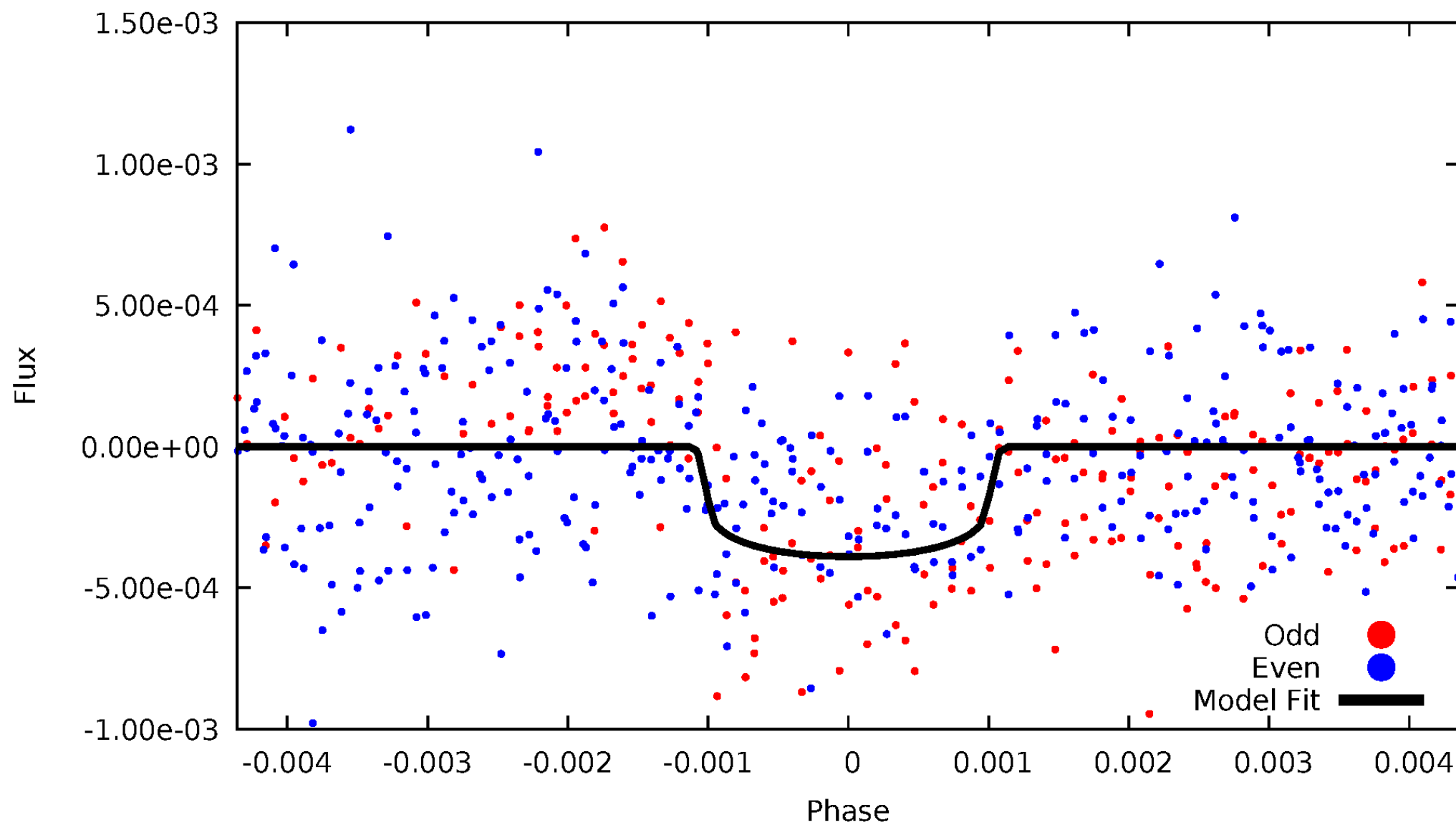


TCE 008613535-03



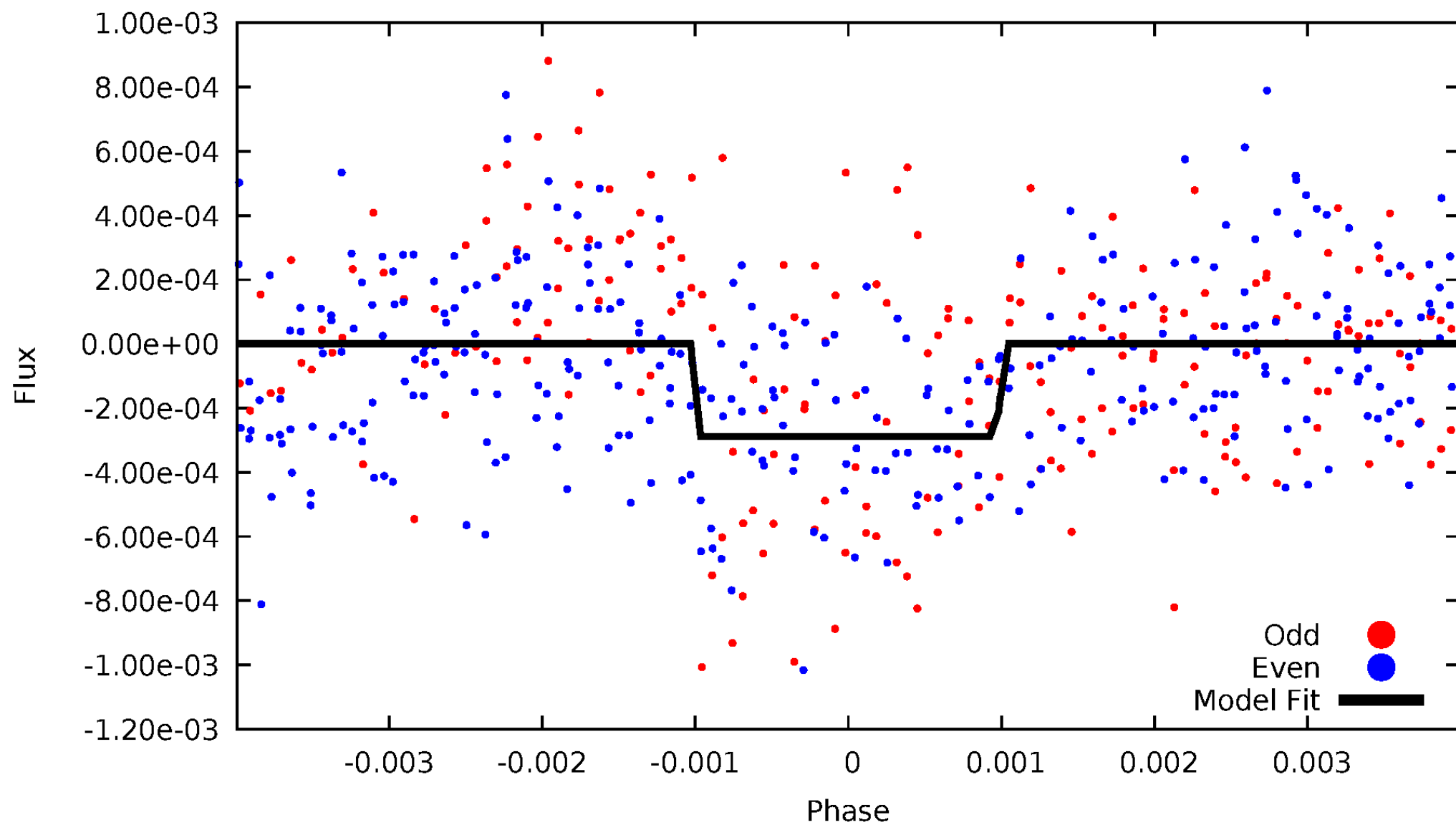
DV Odd/Even

TCE 008613535-03



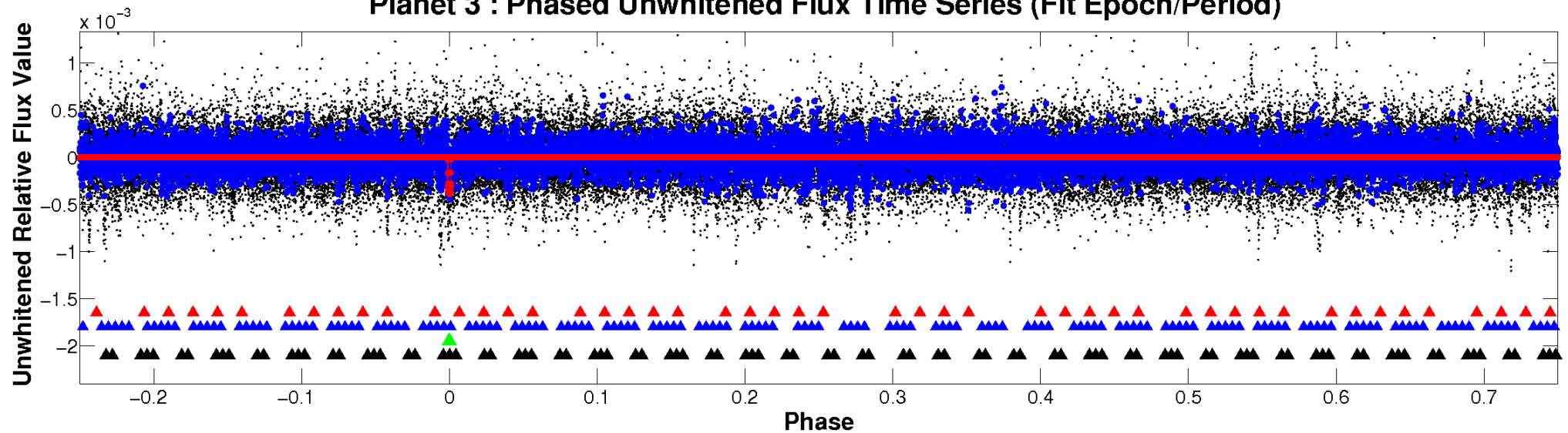
ALT Odd/Even

TCE 008613535-03

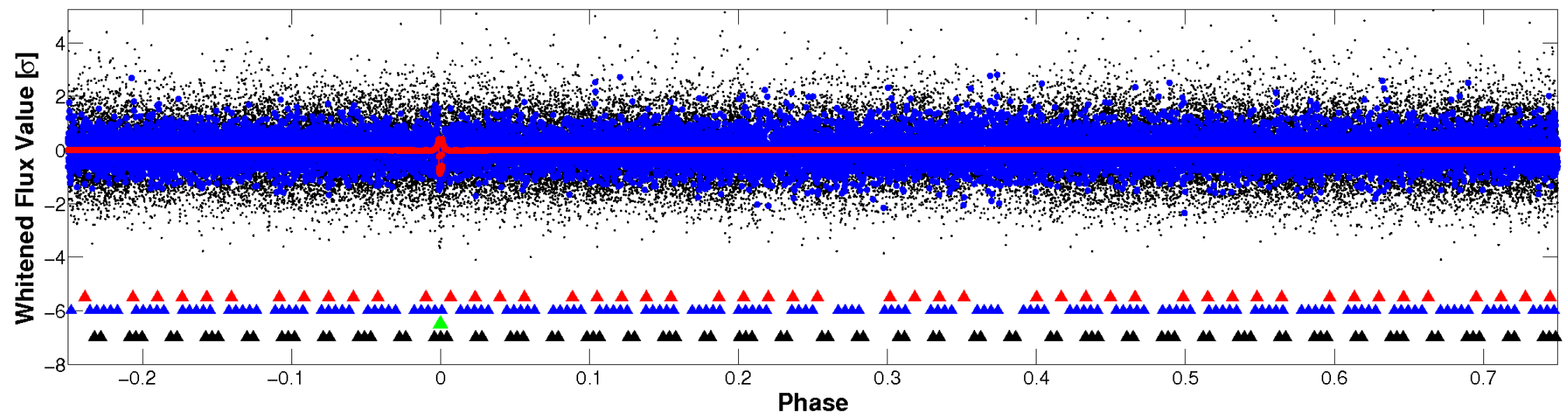


Non-Whitened Vs. Whitened Light Curve

Planet 3 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

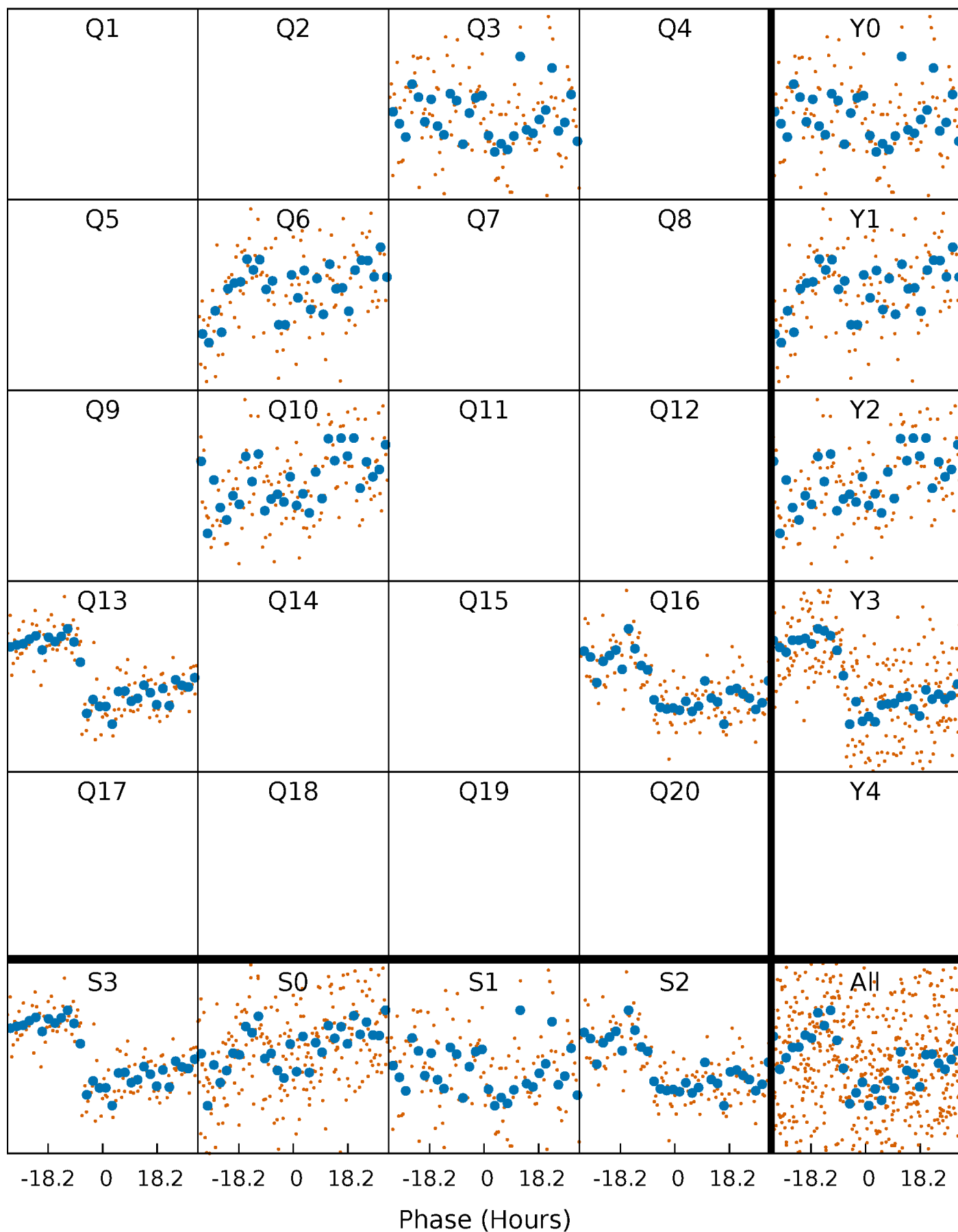


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



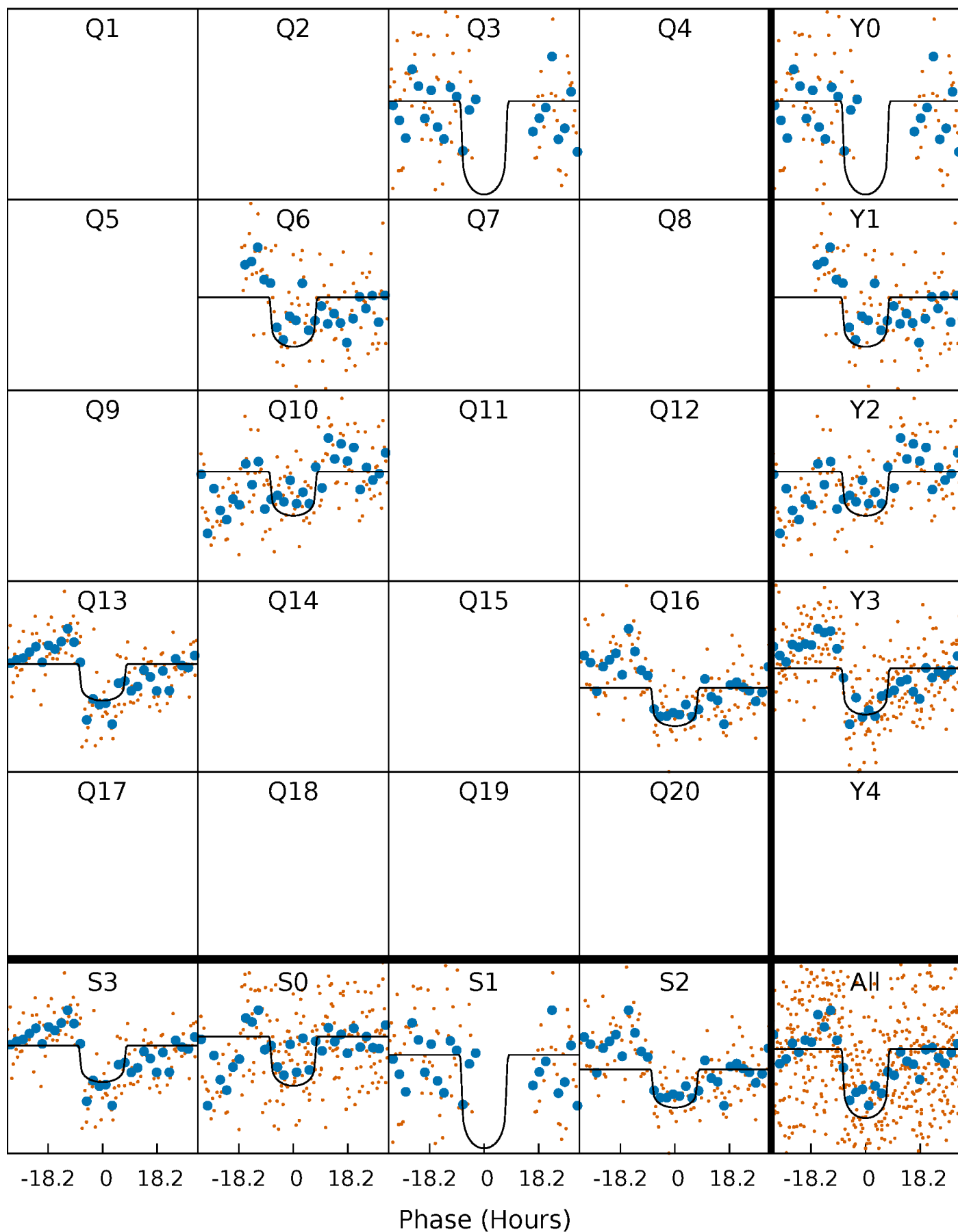
PDC Quarter-Phased Transit Curves

TCE 008613535-03 P=304.724764 Days $T_0=310.492870$ (BKJD)



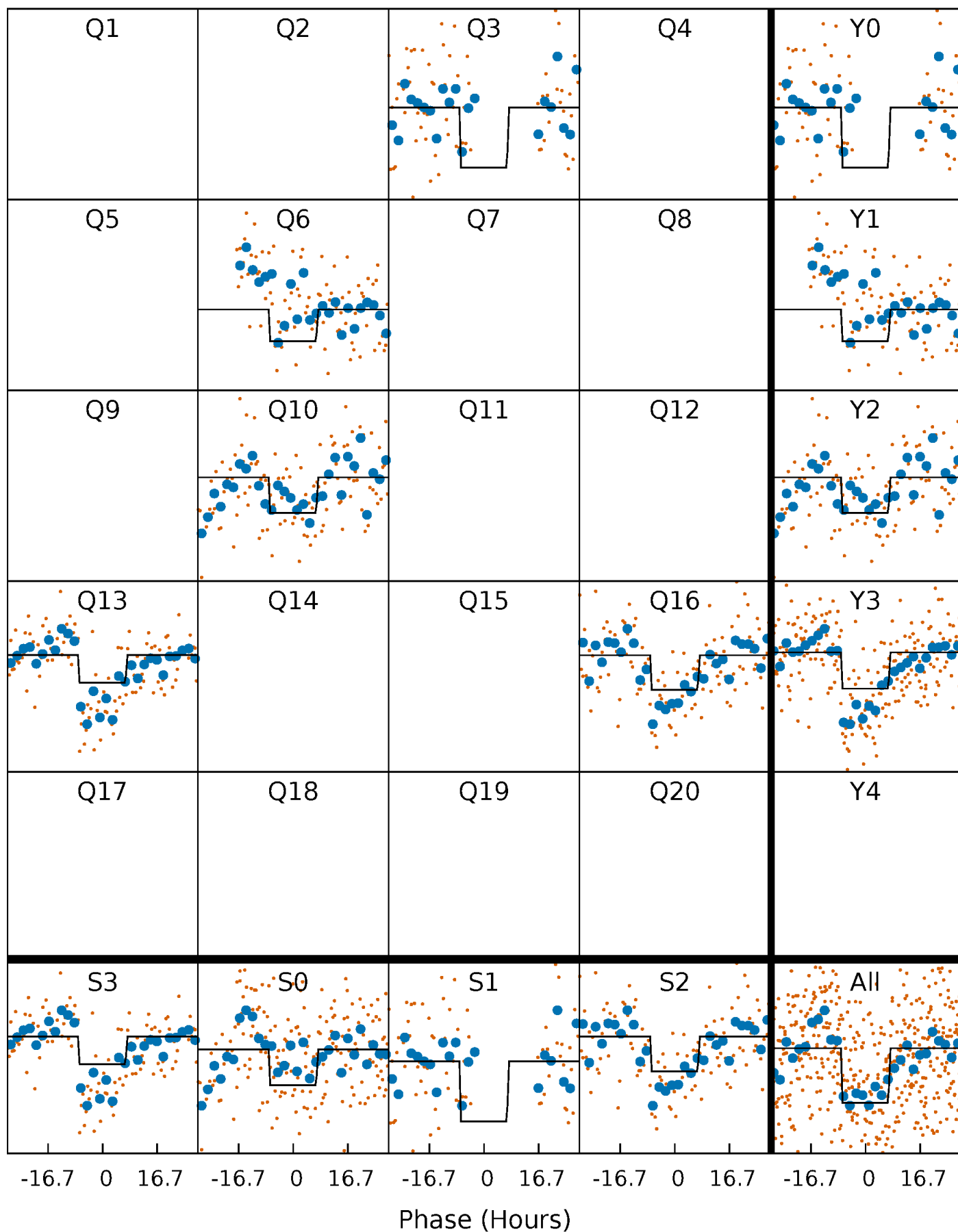
DV Quarter-Phased Transit Curves

TCE 008613535-03 P=304.724764 Days $T_0=310.492870$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

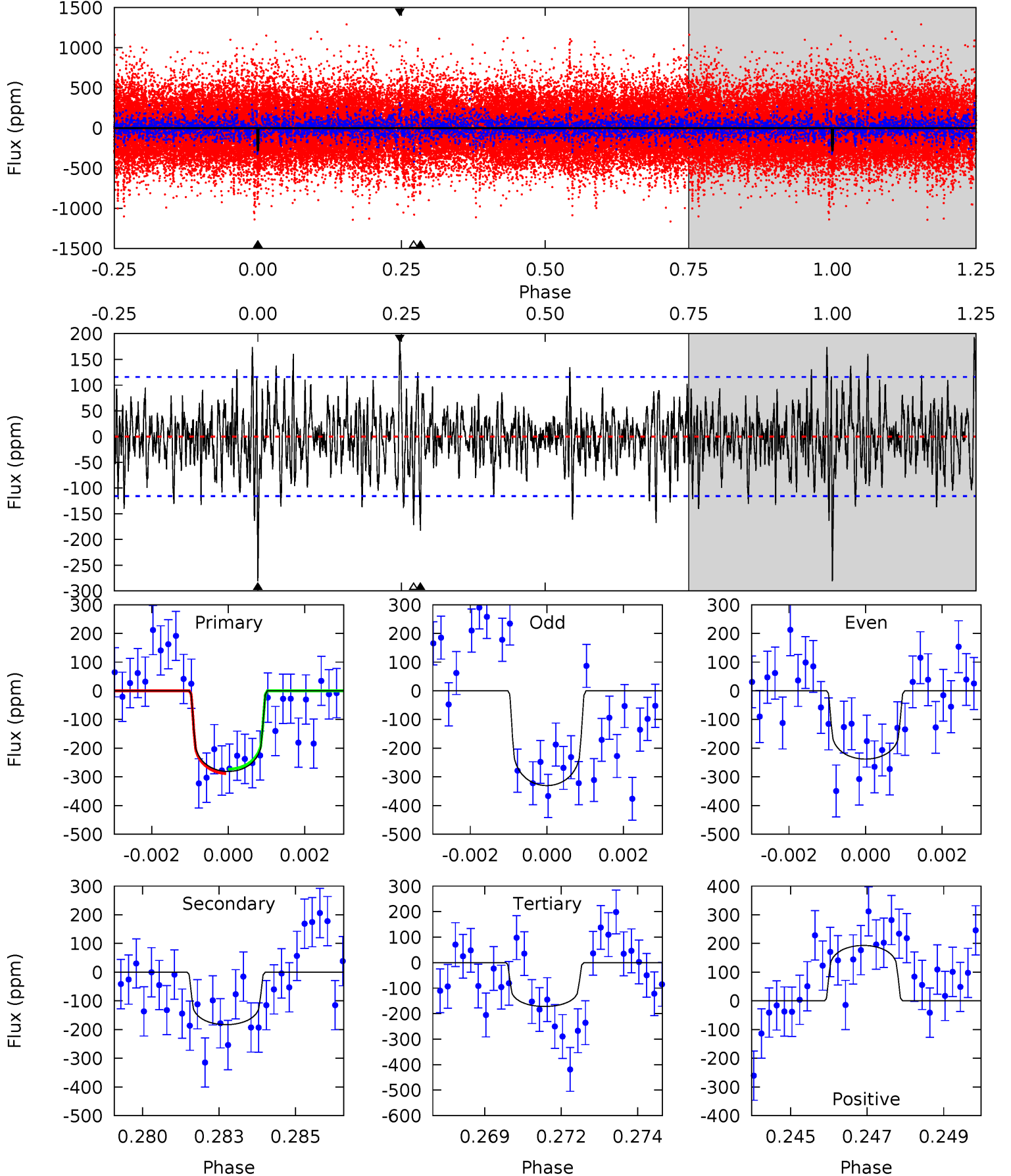
TCE 008613535-03 P=304.725680 Days $T_0=310.497182$ (BKJD)



DV Model-Shift Uniqueness Test

008613535-03, P = 304.724764 Days, E = 5.768106 Days

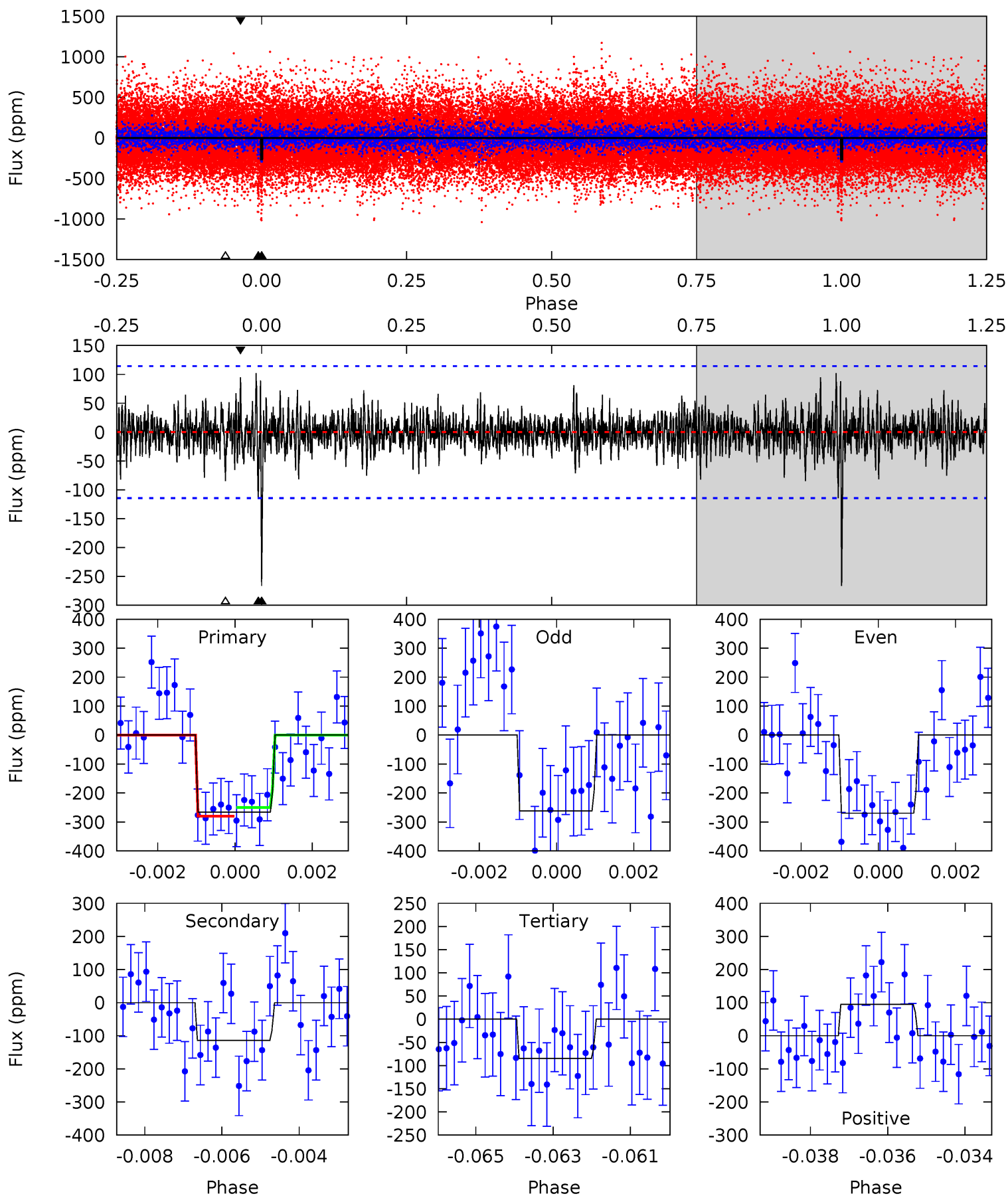
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.9	8.39	7.89	8.85	5.31	3.06	2.11	5.00	4.04	0.50	-0.47	2.12	1.13	0.41	0.36



Alt Model-Shift Uniqueness Test

008613535-03, $P = 304.725680$ Days, $E = 5.771502$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.4	5.33	3.93	4.42	5.33	3.09	1.02	8.46	7.97	1.39	0.90	0.18	1.10	0.28	0.69



Stellar Parameters For KIC 008613535

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6249^{+174}_{-217}	$4.428^{+0.054}_{-0.202}$	$-0.040^{+0.250}_{-0.300}$	$1.076^{+0.335}_{-0.112}$	$1.130^{+0.159}_{-0.159}$	$1.279^{+0.356}_{-0.665}$
	+3%/-3%	+1%/-5%	+625%/-750%	+31%/-10%	+14%/-14%	+28%/-52%
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 008613535-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-183 ± 22	$2.44^{+0.51}_{-0.44}$	425^{+27}_{-22}	5185^{+503}_{-380}	13911^{+7230}_{-4286}
Alt.	-114 ± 21	$2.08^{+0.48}_{-0.43}$	424^{+28}_{-19}	5042^{+554}_{-455}	12108^{+7577}_{-4362}

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

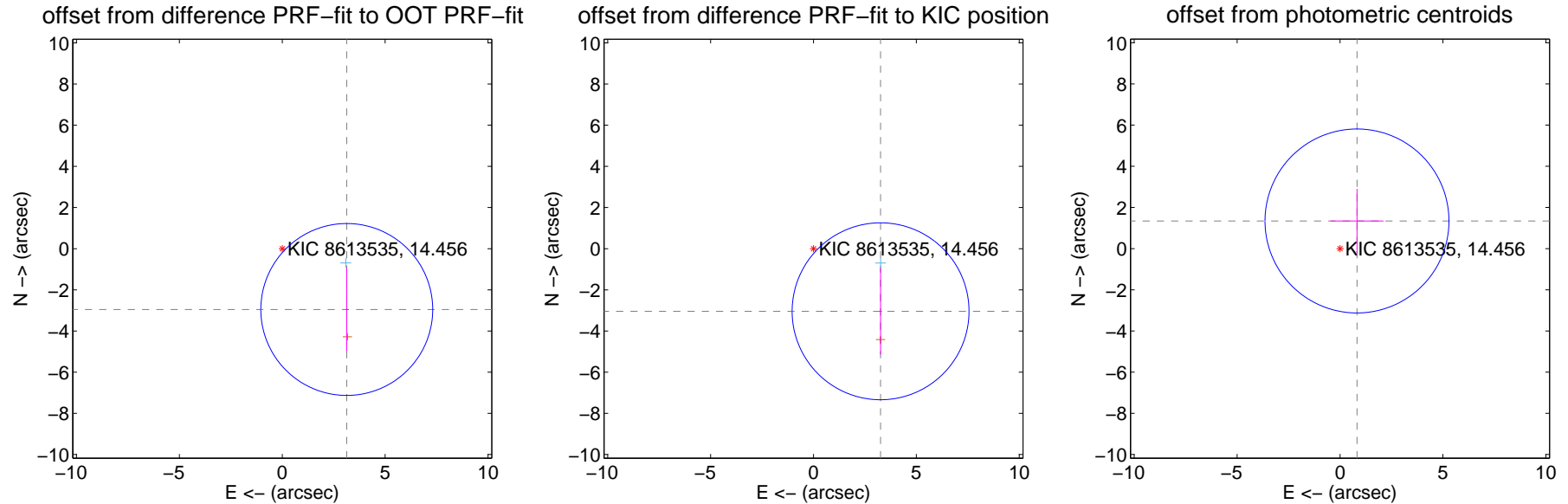
DV Centroid Data

Supplemental centroid analysis for 008613535-03. Kepler magnitude: 14.46. Transit SNR 9.60

There are 1 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	4.309 ± 1.392	3.09	-3.136 ± 0.082	-2.955 ± 2.028
PRF-fit source offset from KIC position	4.460 ± 1.433	3.11	-3.261 ± 0.067	-3.042 ± 2.100
photometric centroid source offset	1.58 ± 1.49	1.06	-0.82 ± 1.29	1.34 ± 1.56



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

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

Q1 no difference image



Q1 no OOT image



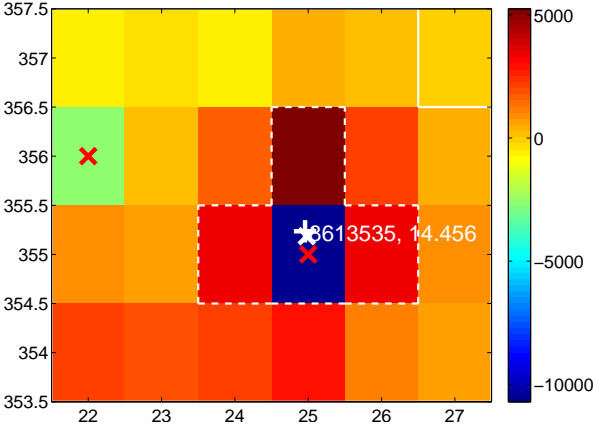
Q2 no difference image



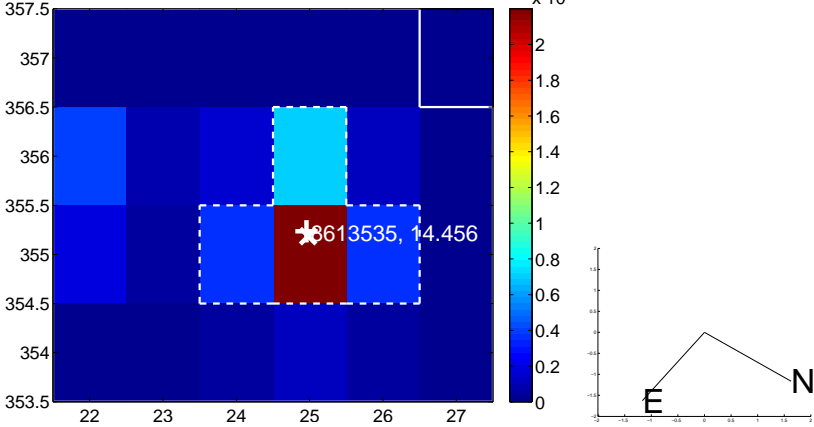
Q2 no OOT image



Q3 difference image. Poor Quality



Q3 OOT image



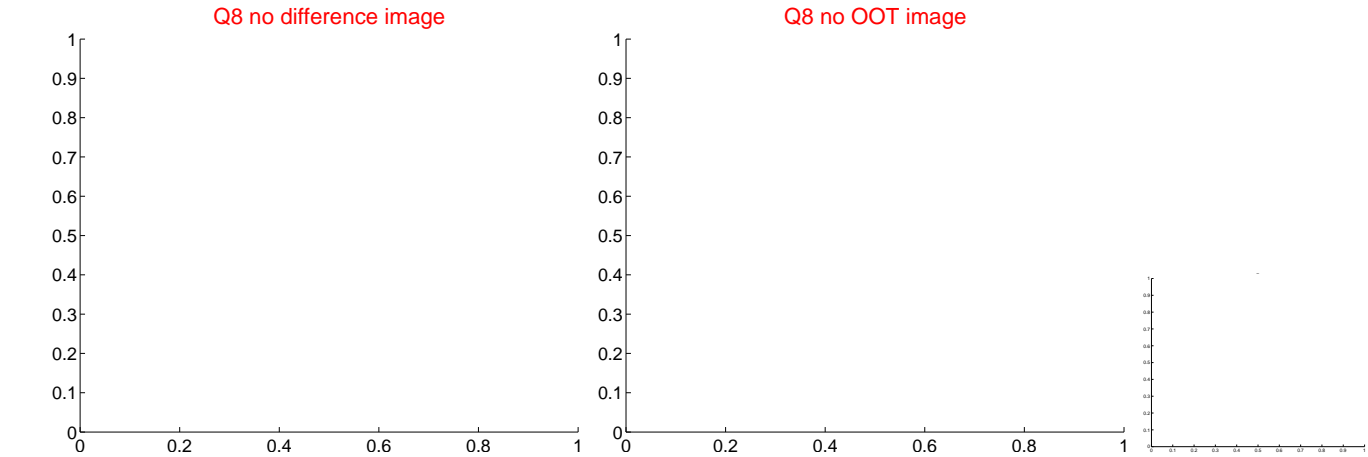
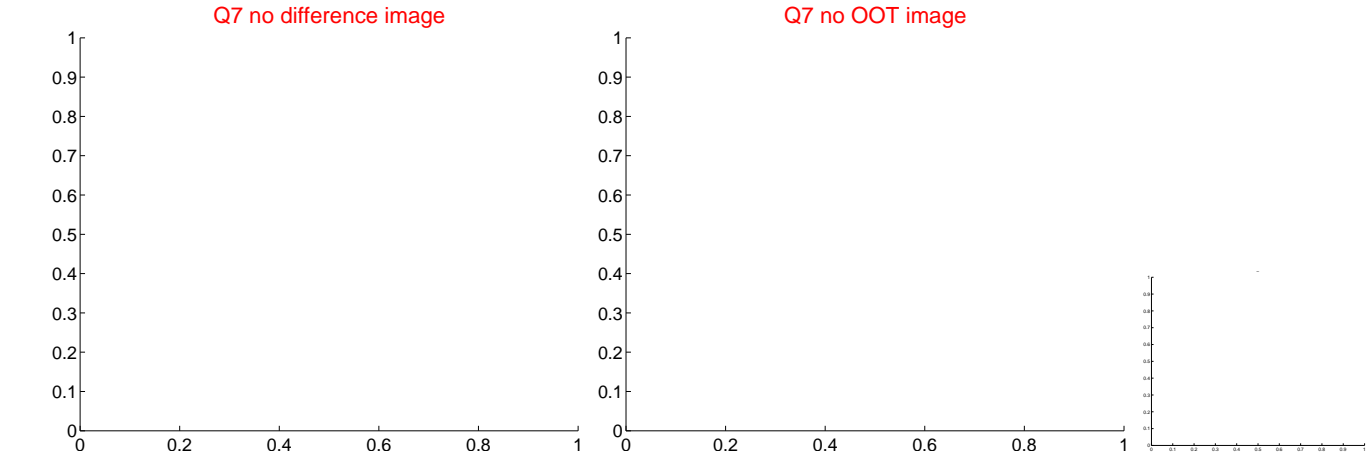
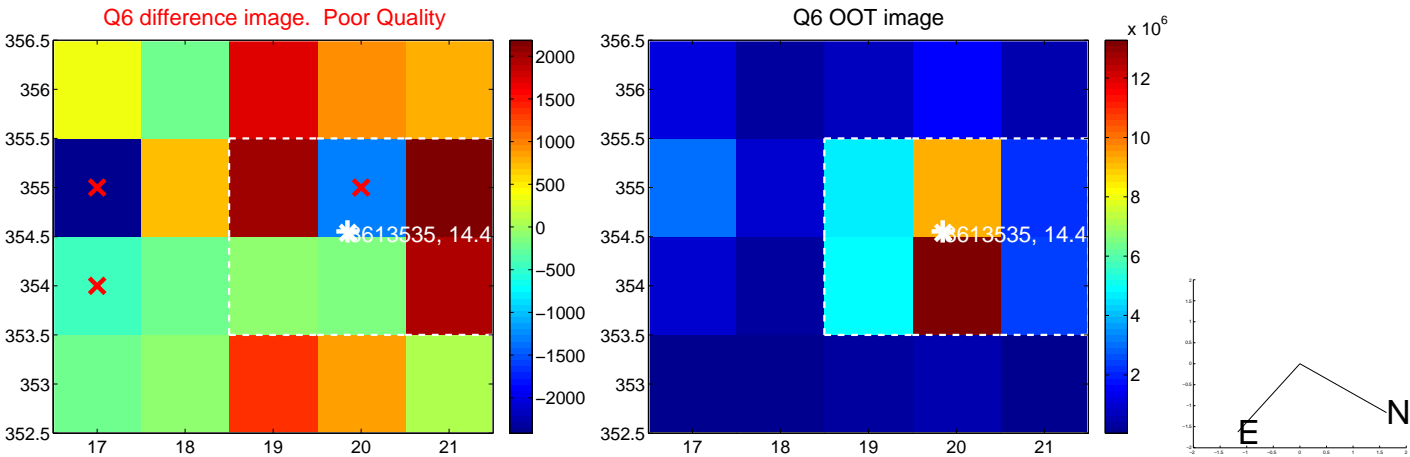
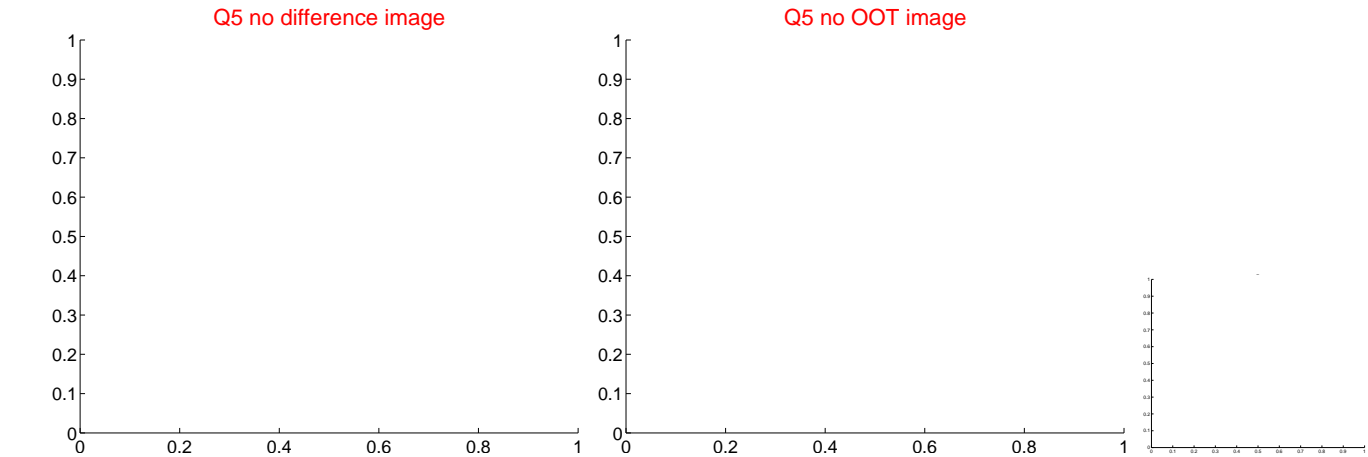
Q4 no difference image



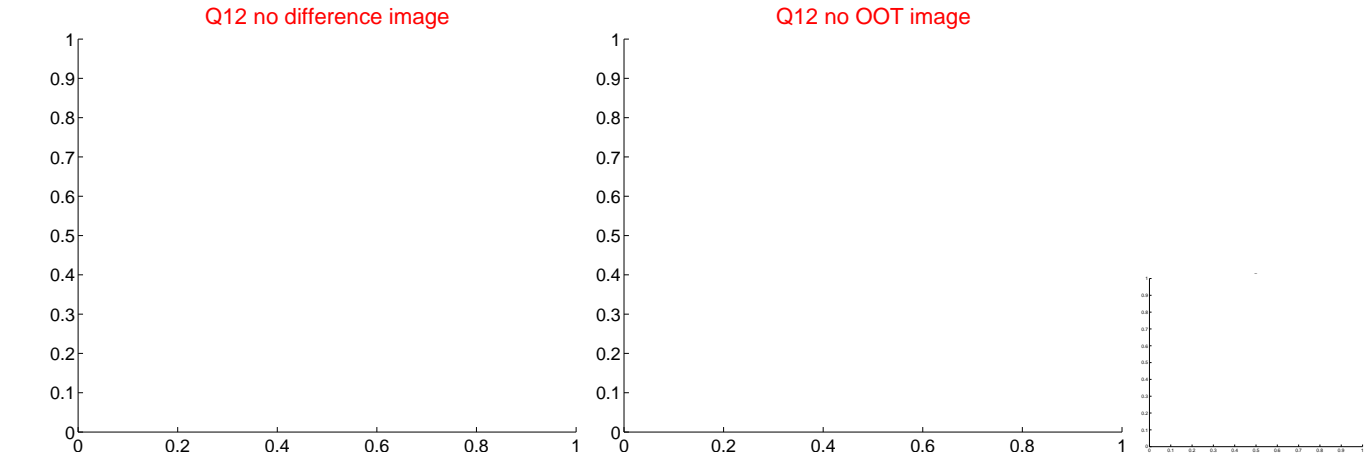
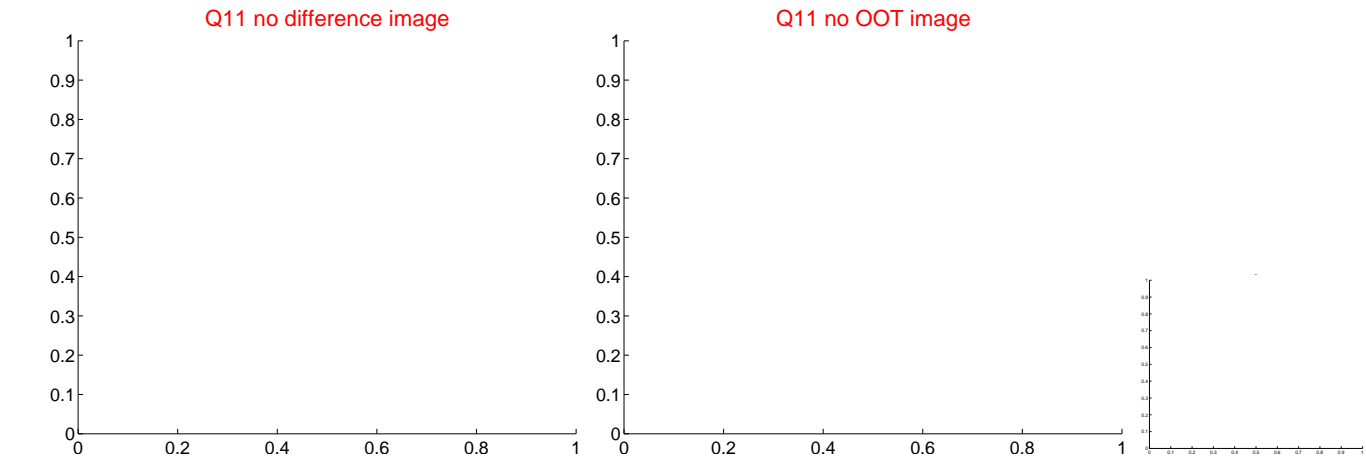
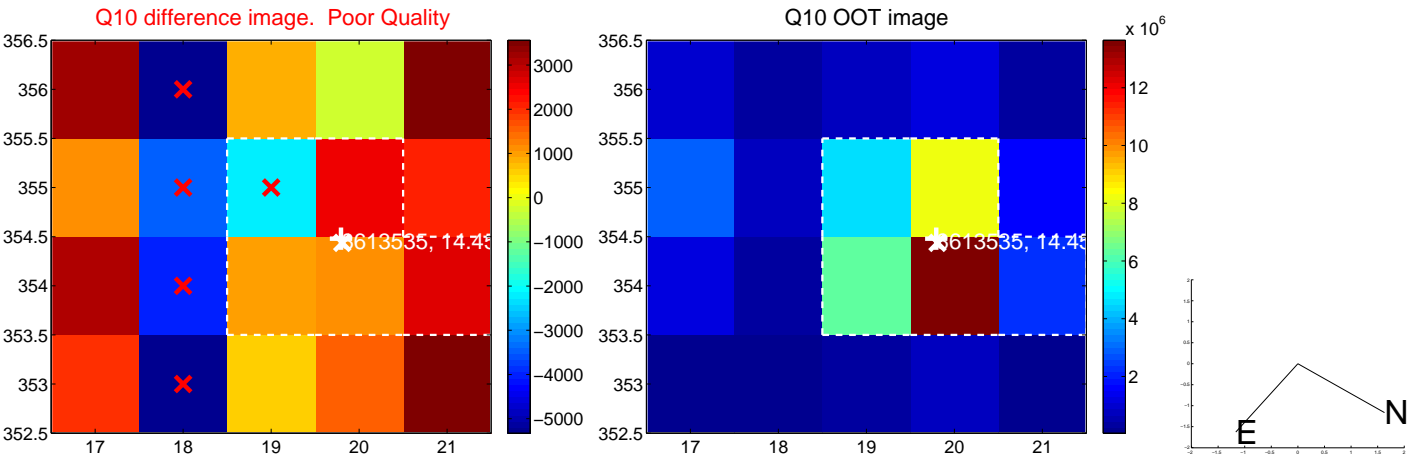
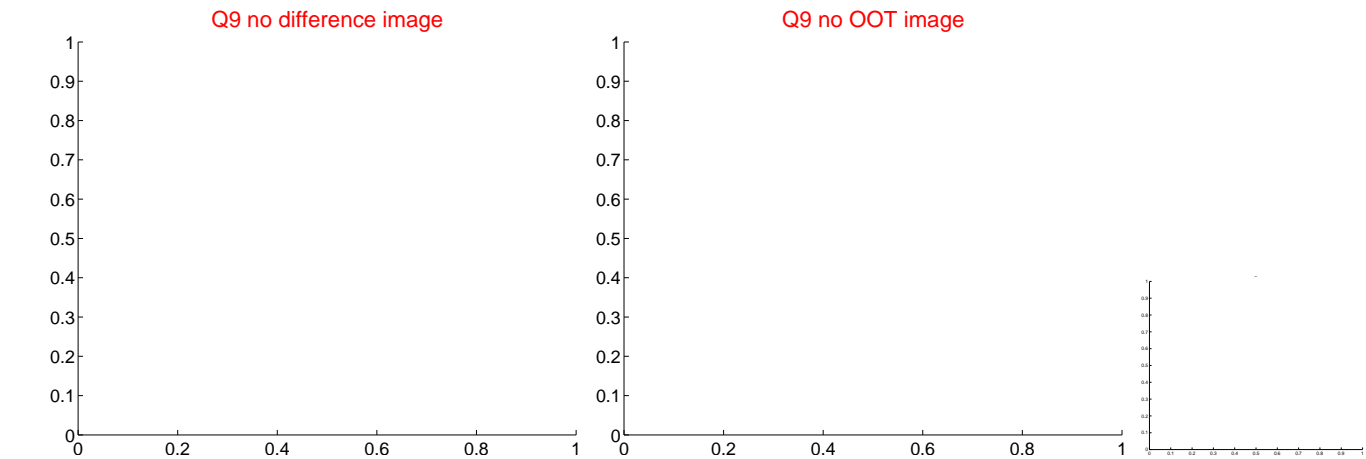
Q4 no OOT image



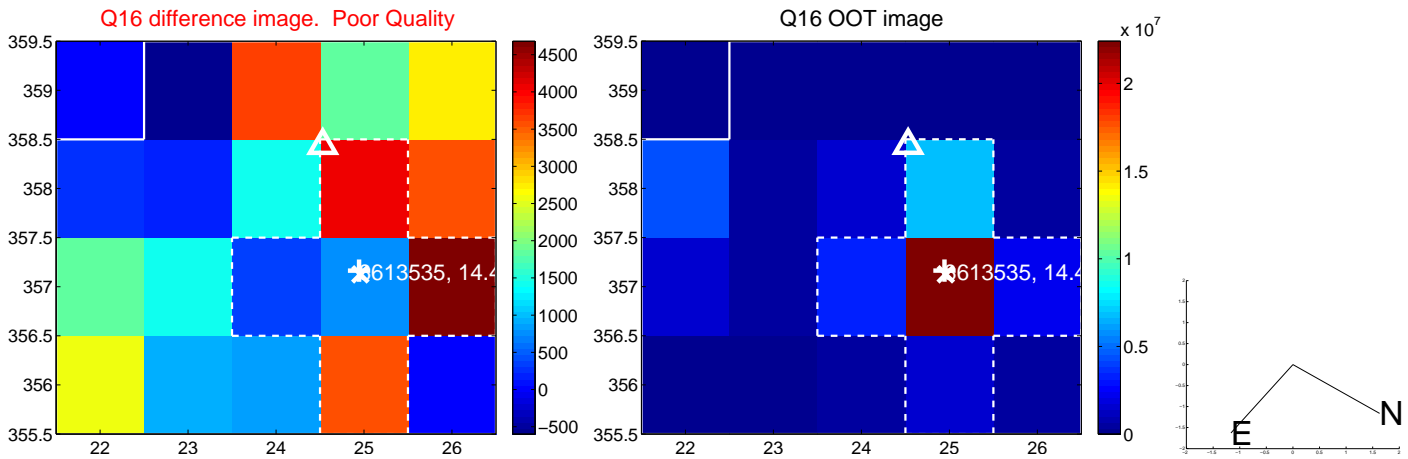
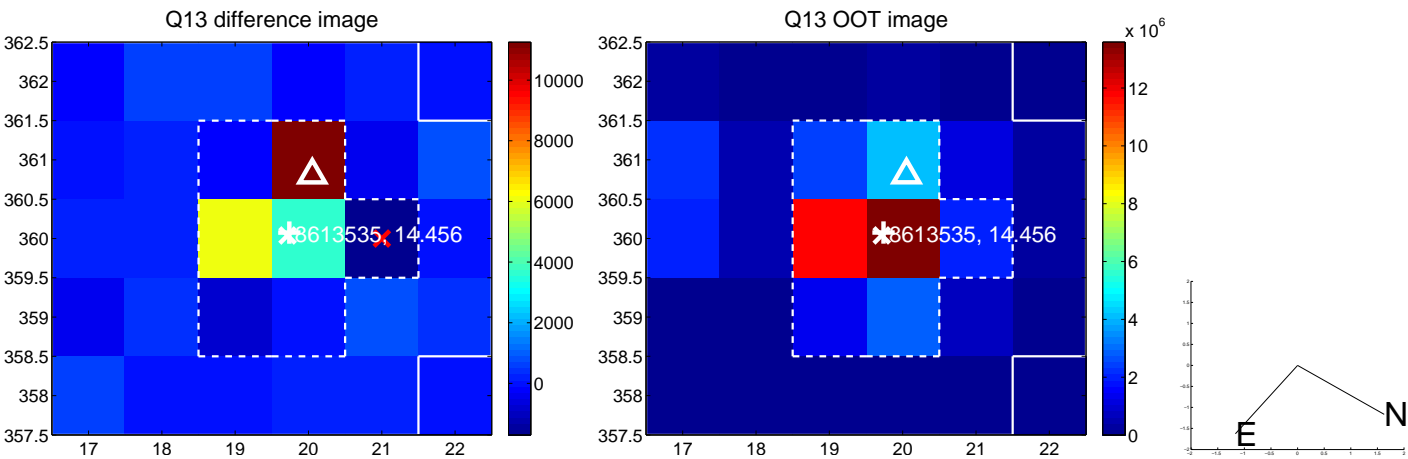
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



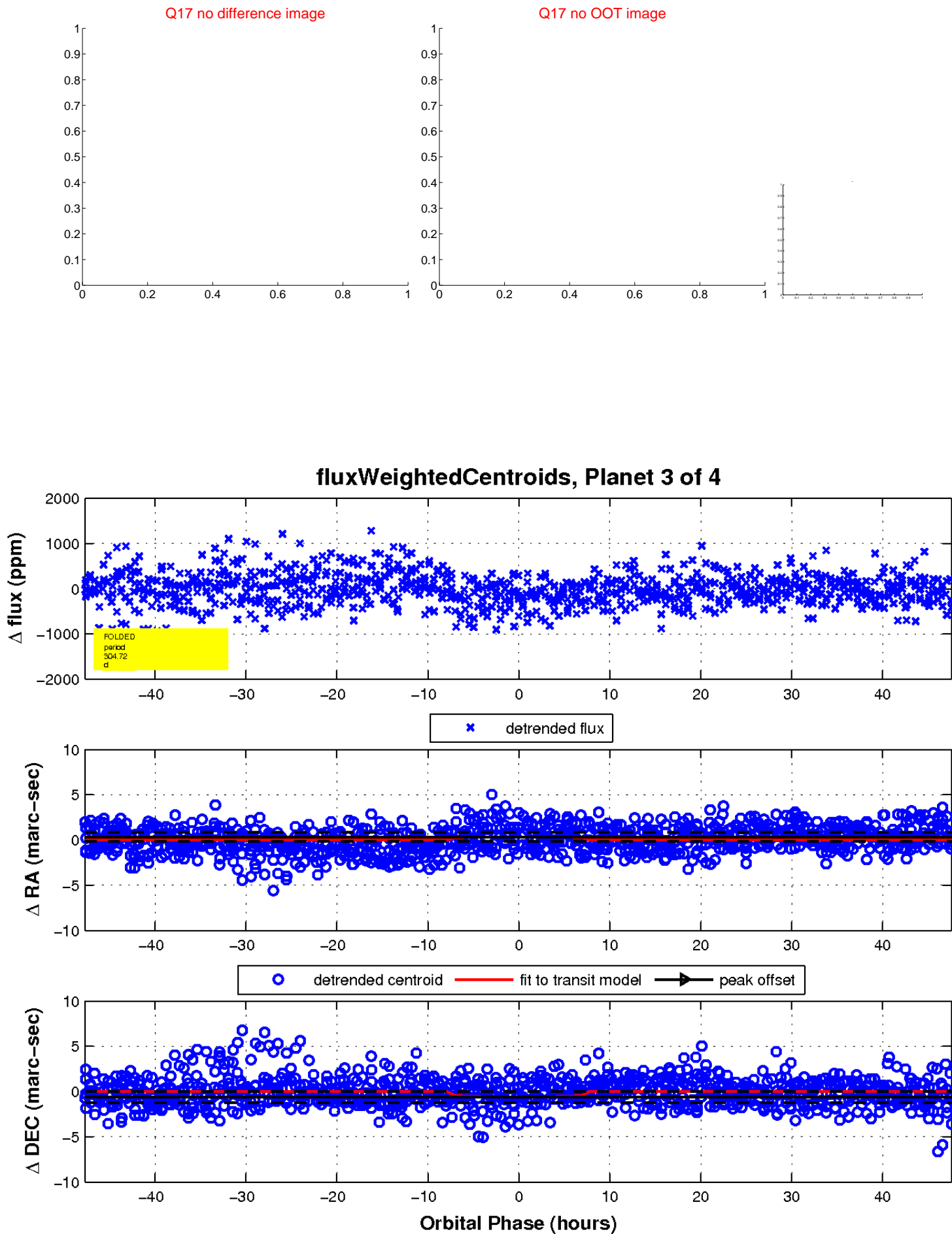
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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

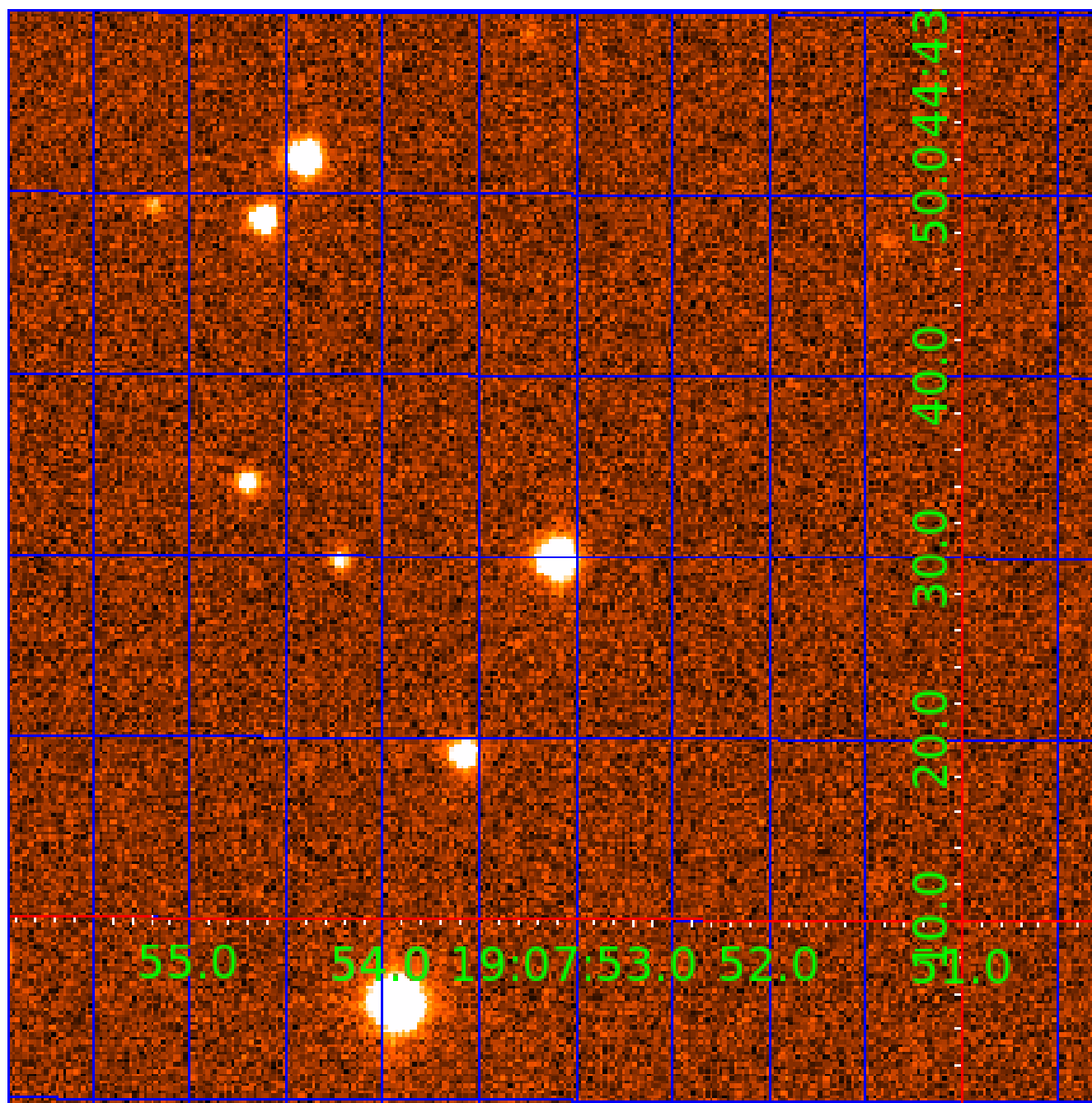


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008613535

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})
008613535-01	OBS	2263.01	29.968709	147.856477	315.9	6.905	19.8	22.3	1.08	6249	2.13	40.84
008613535-02	OBS	2263.02	9.478527	140.164658	176.2	6.270	20.0	21.8	1.08	6249	1.58	189.53
008613535-03	OBS	No	304.724764	310.492870	389.3	15.931	10.3	9.6	1.08	6249	2.37	1.85
008613535-04	OBS	2263.03	15.593828	140.306631	87.9	8.335	8.4	9.0	1.08	6249	1.15	97.59

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008613535-01	OBS	PC	0.96	0	0	0	0	NO_COMMENT
008613535-02	OBS	PC	1.00	0	0	0	0	NO_COMMENT
008613535-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008613535-04	OBS	PC	0.55	0	0	0	0	CENT_FEW_MEAS

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

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

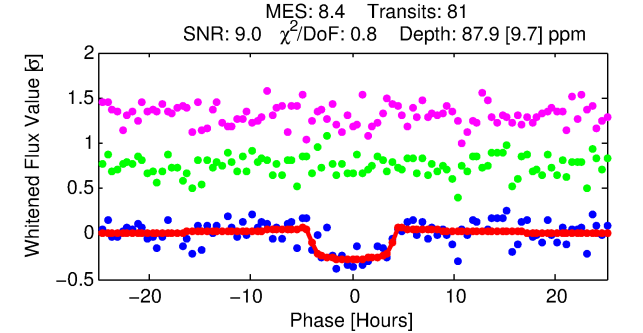
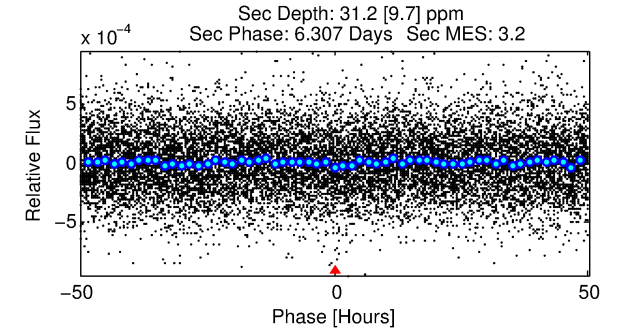
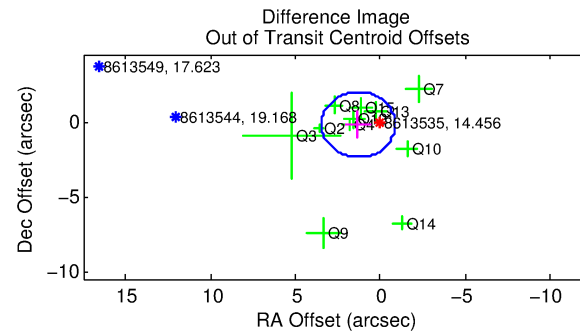
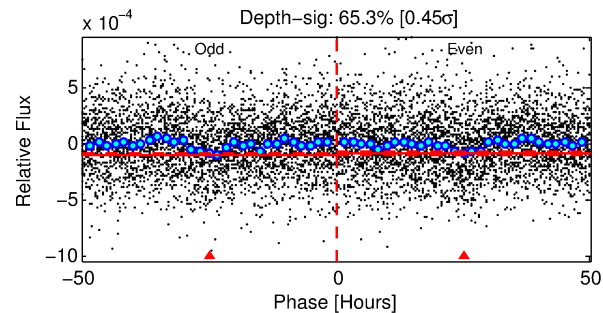
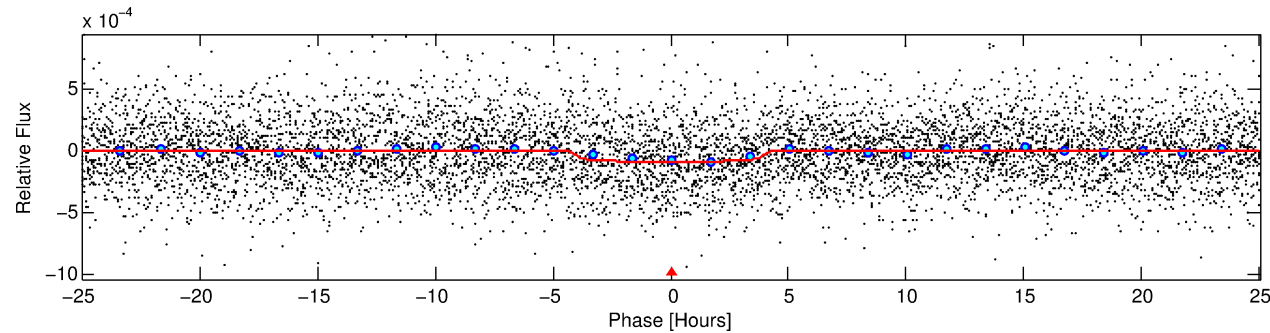
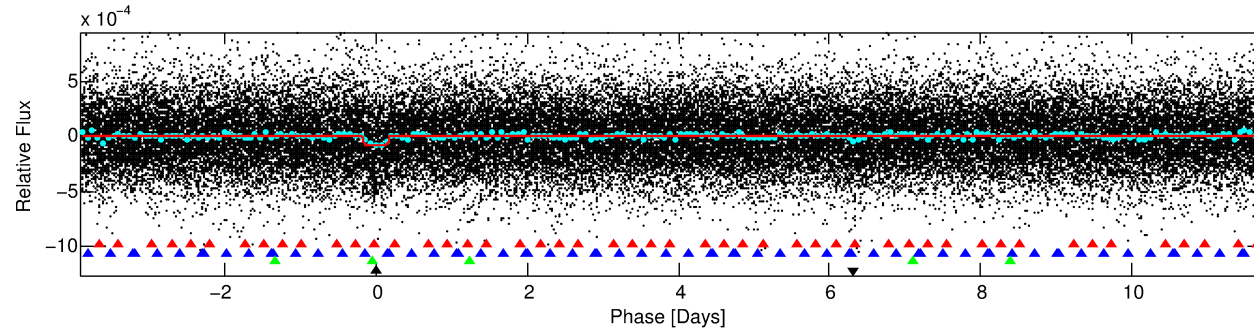
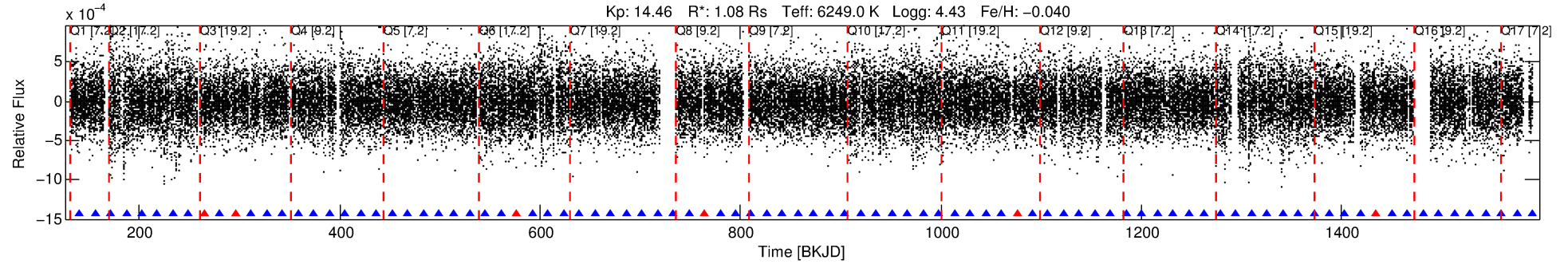
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008613535-04

No Significant Match Found

DV One-Page Summary

KIC: 8613535 Candidate: 4 of 4 Period: 15.594 d
KOI: K02263 Corr: No Ephemeris Match



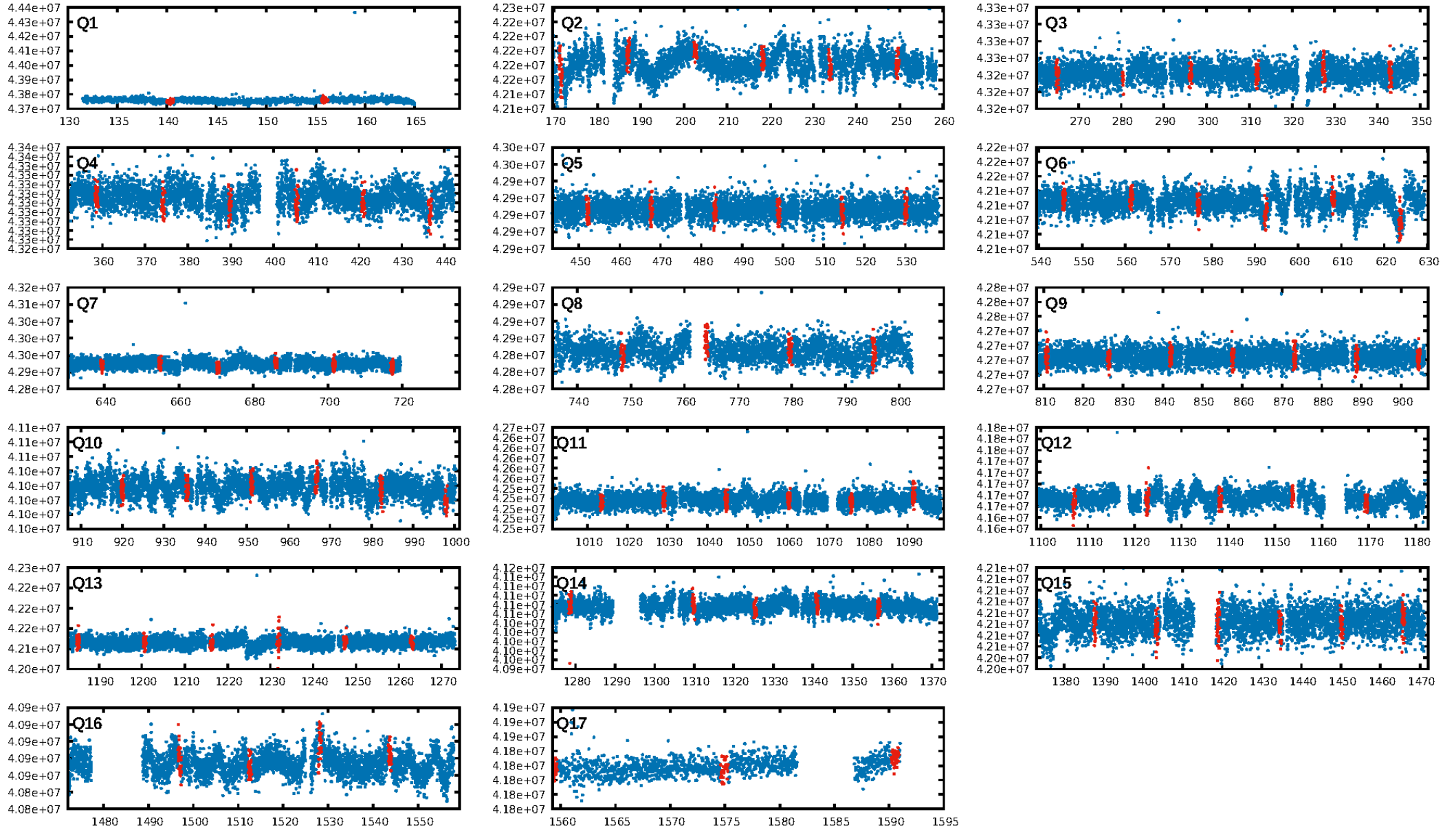
DV Fit Results:

Period = 15.59383 [0.00027] d
Epoch = 140.3066 [0.0137] BKJD
Rp/R* = 0.0098 [0.0036]
a/R* = 7.76 [14.64]
b = 0.85 [0.62]
Seff = 97.59 [38.86]
Teq = 801 [80] K
Rp = 1.15 [0.55] Re
a = 0.1273 [0.0330] AU
Ag = 212.04 [186.63] [1.13 σ]
Teffp = 4729 [957] K [4.09 σ]

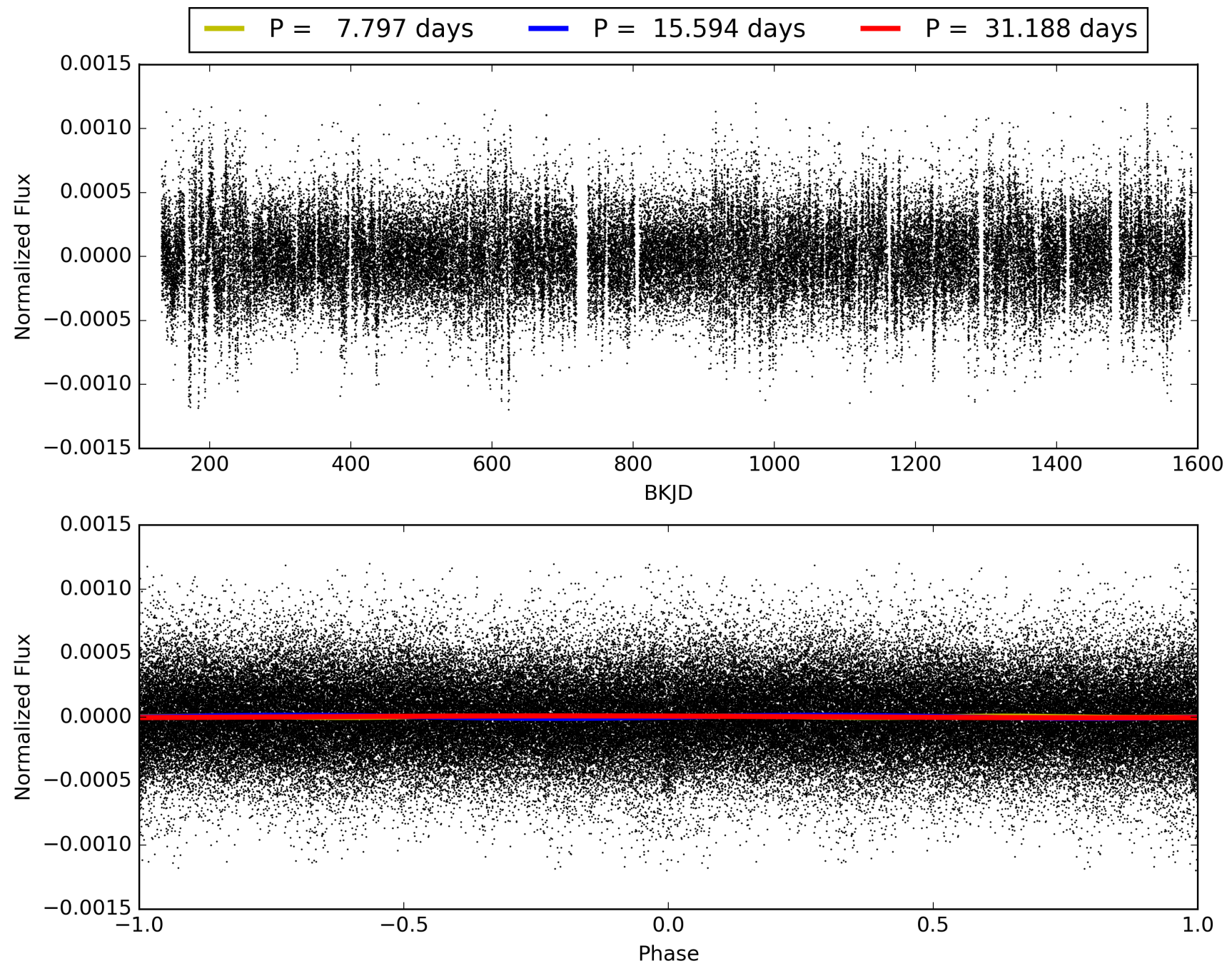
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [14.07 σ]
LongPeriod-sig: 100.0% [31.87 σ]
ModelChiSquare2-sig: 87.9%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.45e-15
RollingBand-fgt: 0.92 [72/78]
GhostDiagnostic-chr: -2.569
Centroid-sig: 70.7%
Centroid-so: 0.526 arcsec [0.32 σ]
OotOffset-rm: 1.305 arcsec [1.79 σ]
KicOffset-rm: 1.260 arcsec [1.90 σ]
OotOffset-st: 3/3/3/2 [11]
KicOffset-st: 3/3/3/2 [11]
DiffImageQuality-fgm: 0.45 [5/11]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 008613535-04, PDC Light Curves

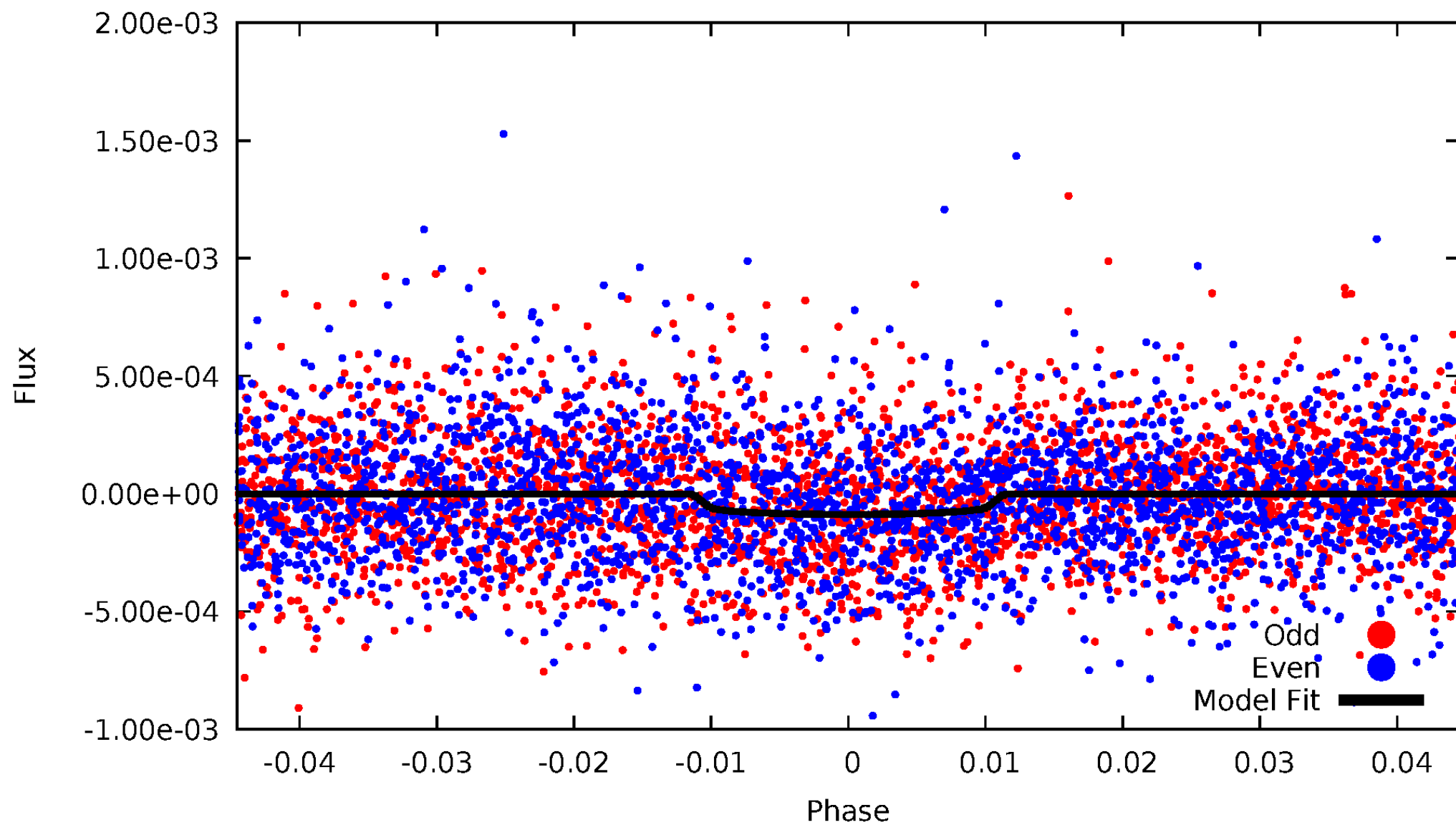


TCE 008613535-04



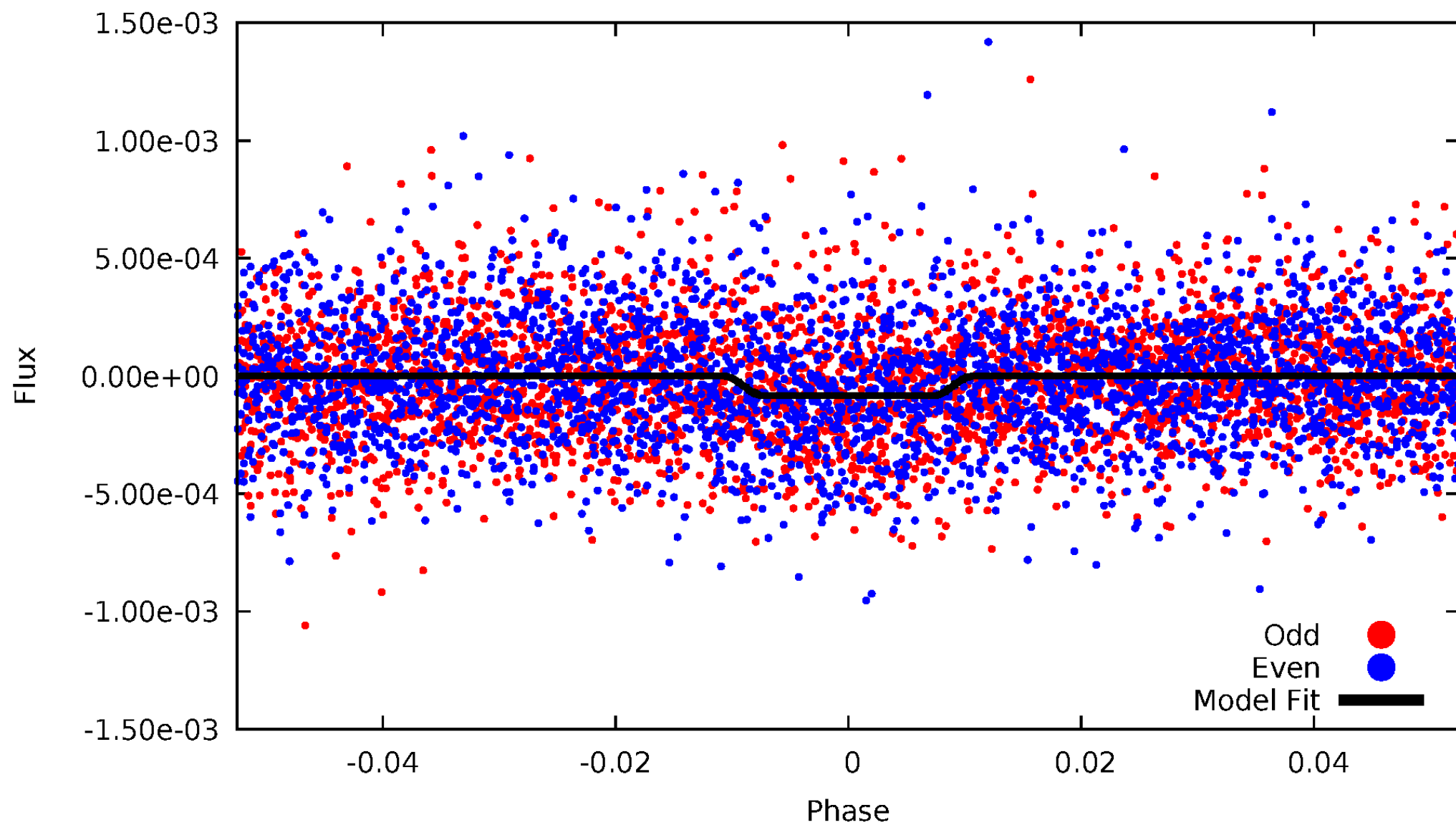
DV Odd/Even

TCE 008613535-04



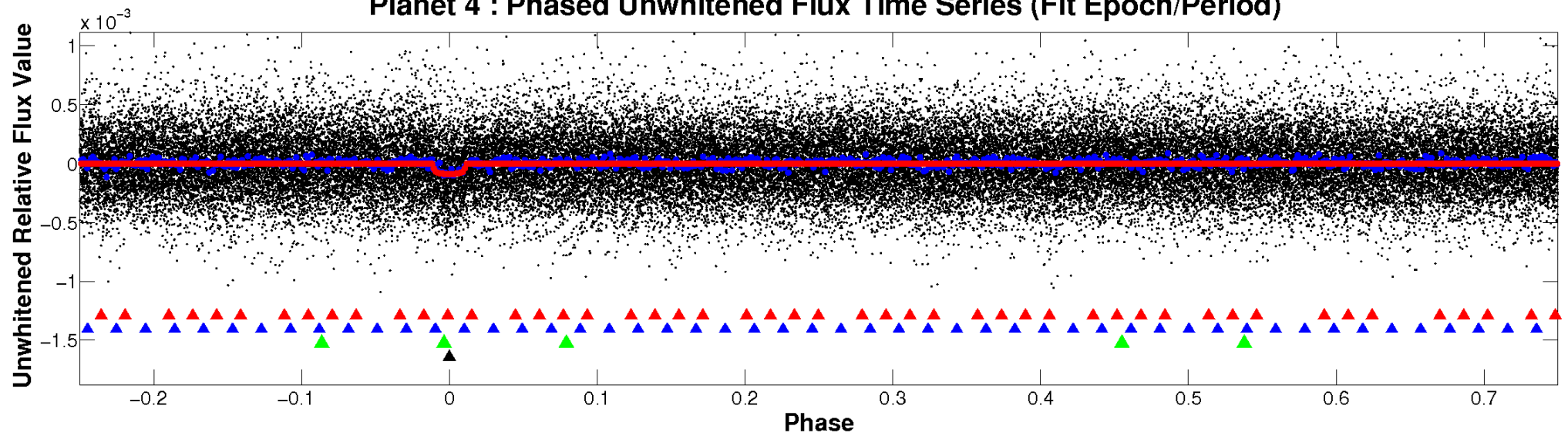
ALT Odd/Even

TCE 008613535-04

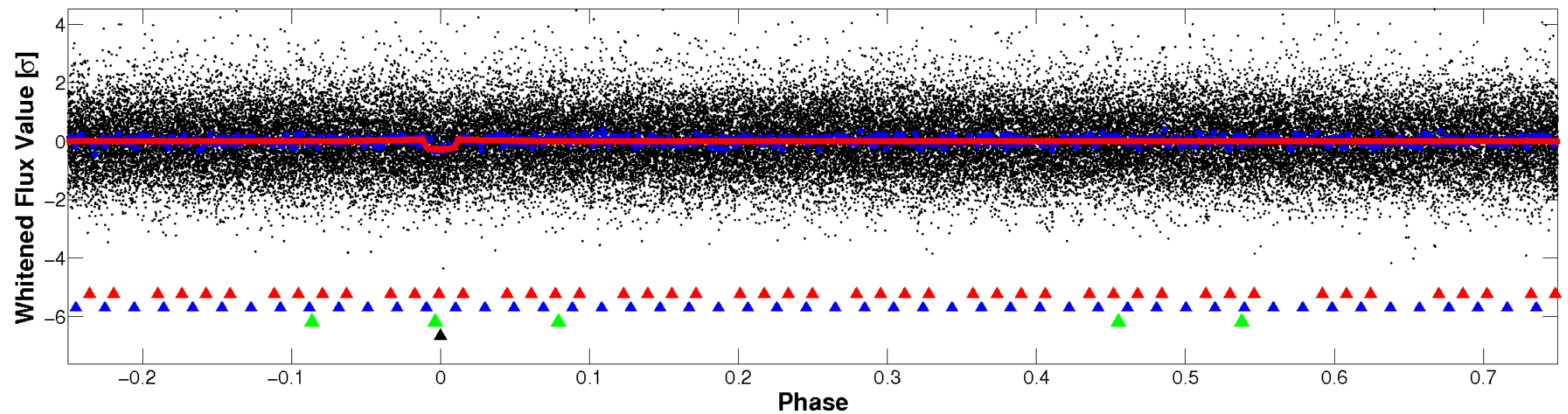


Non-Whitened Vs. Whitened Light Curve

Planet 4 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

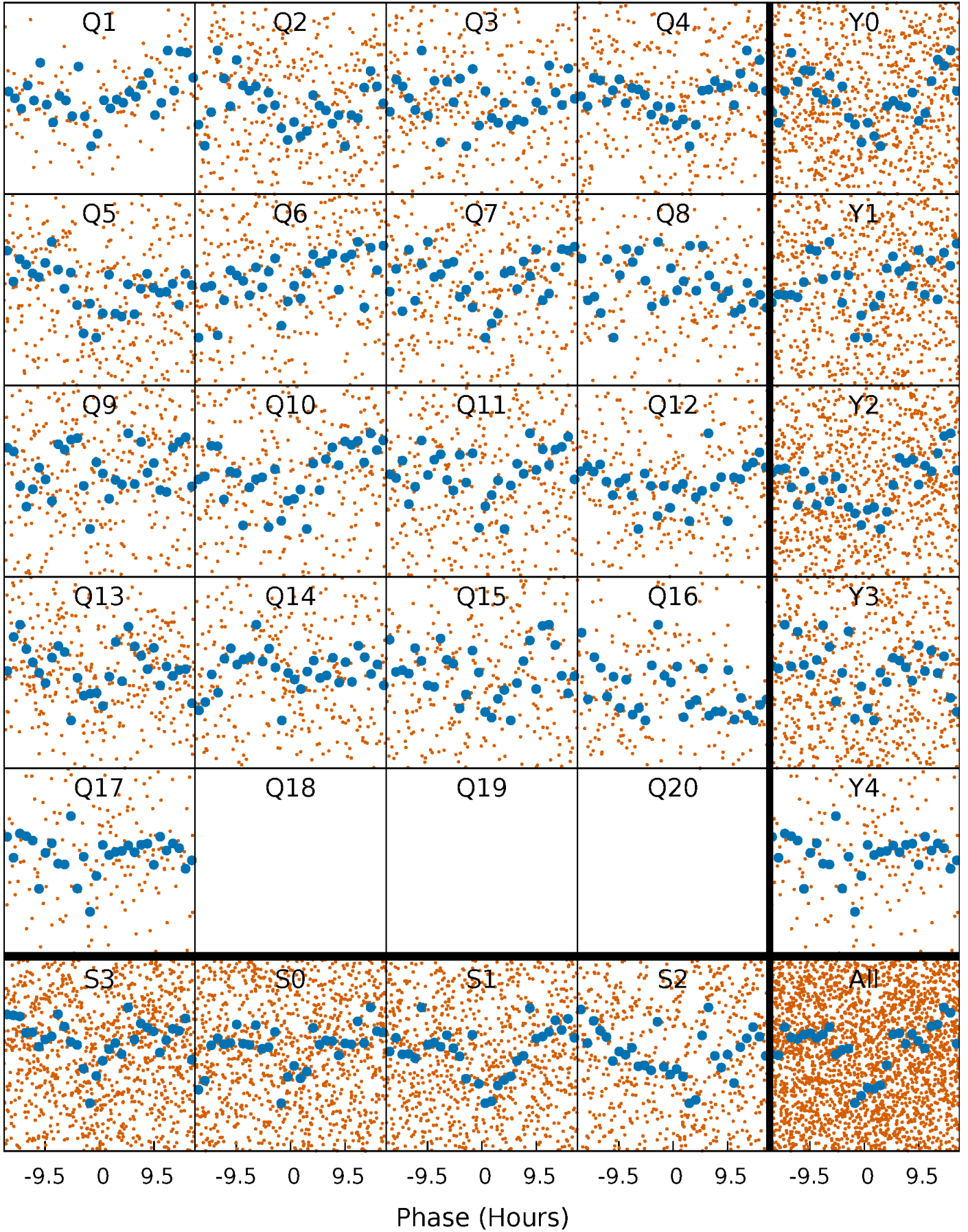


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



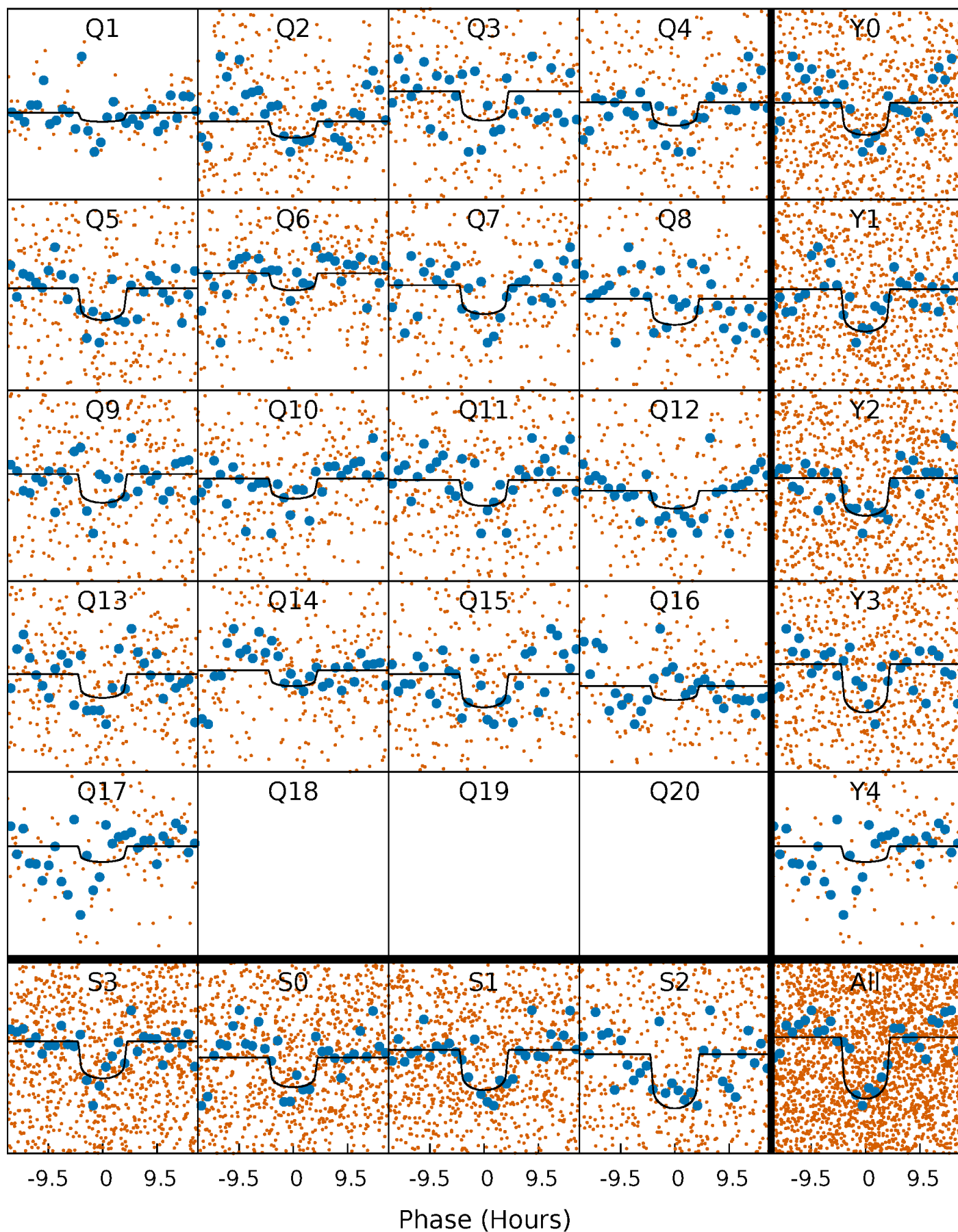
PDC Quarter-Phased Transit Curves

TCE 008613535-04 P= 15.593828 Days $T_0=140.306631$ (BKJD)



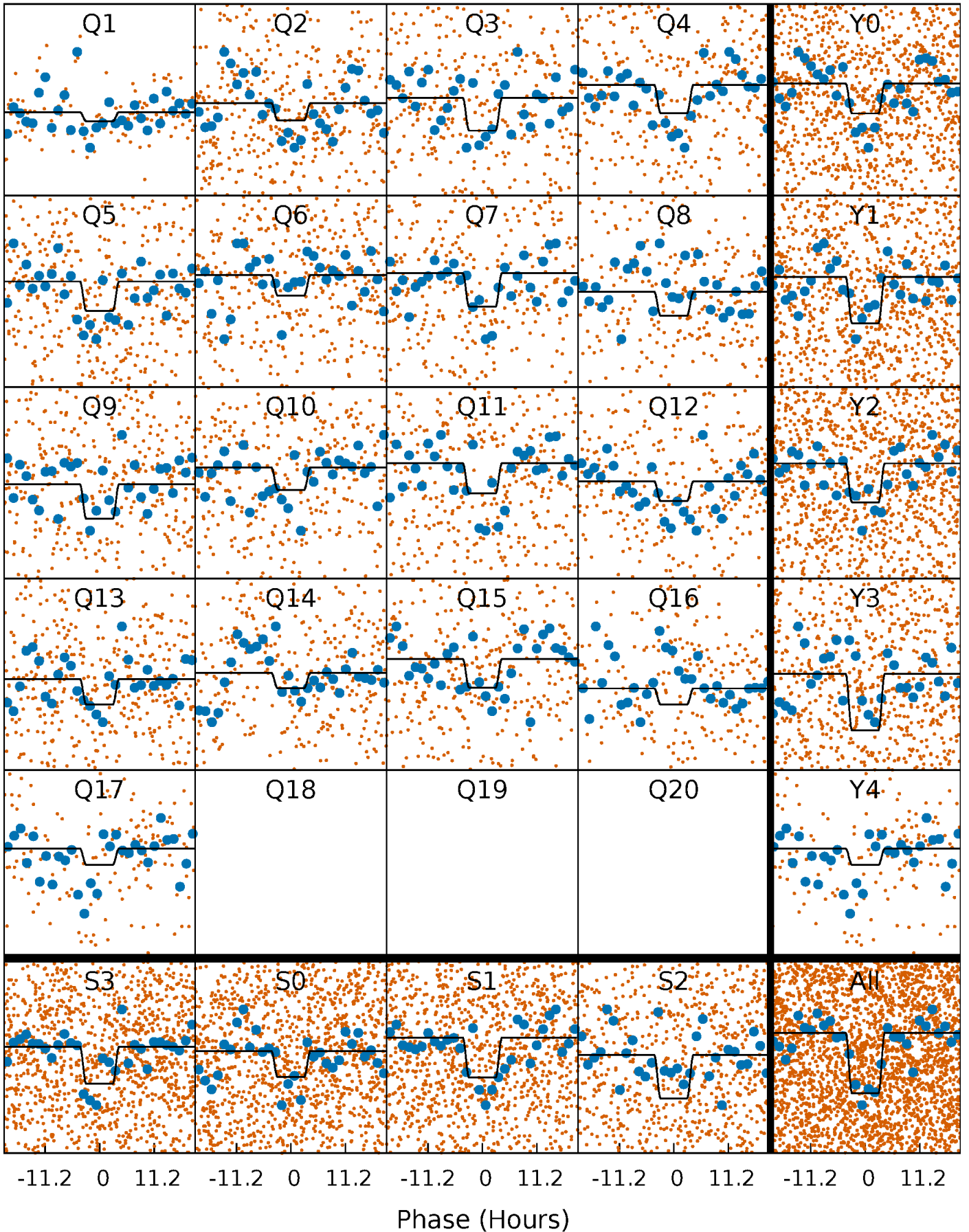
DV Quarter-Phased Transit Curves

TCE 008613535-04 P= 15.593828 Days $T_0=140.306631$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

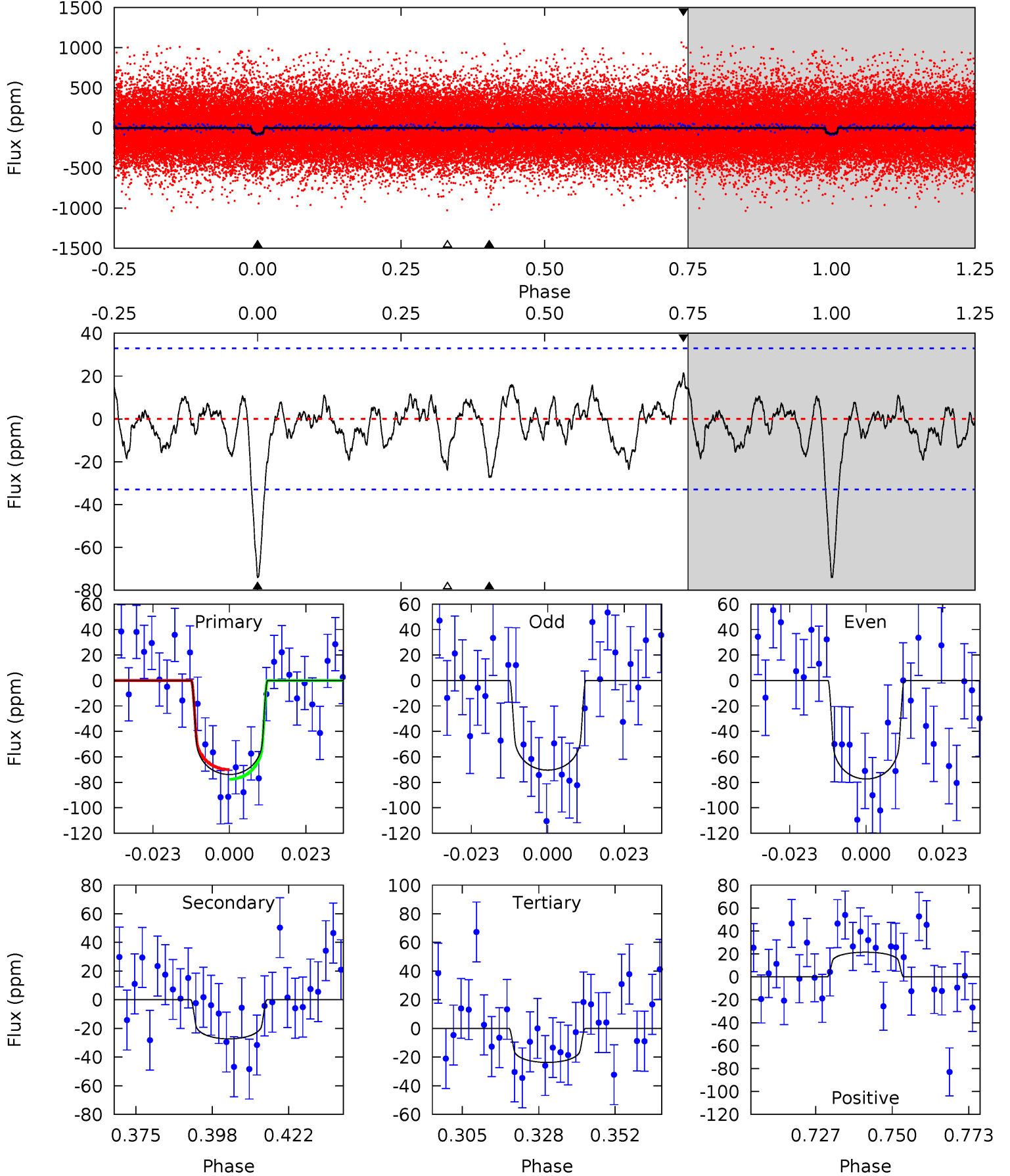
TCE 008613535-04 P= 15.593390 Days $T_0=140.340782$ (BKJD)



DV Model-Shift Uniqueness Test

008613535-04, $P = 15.593828$ Days, $E = 124.712803$ Days

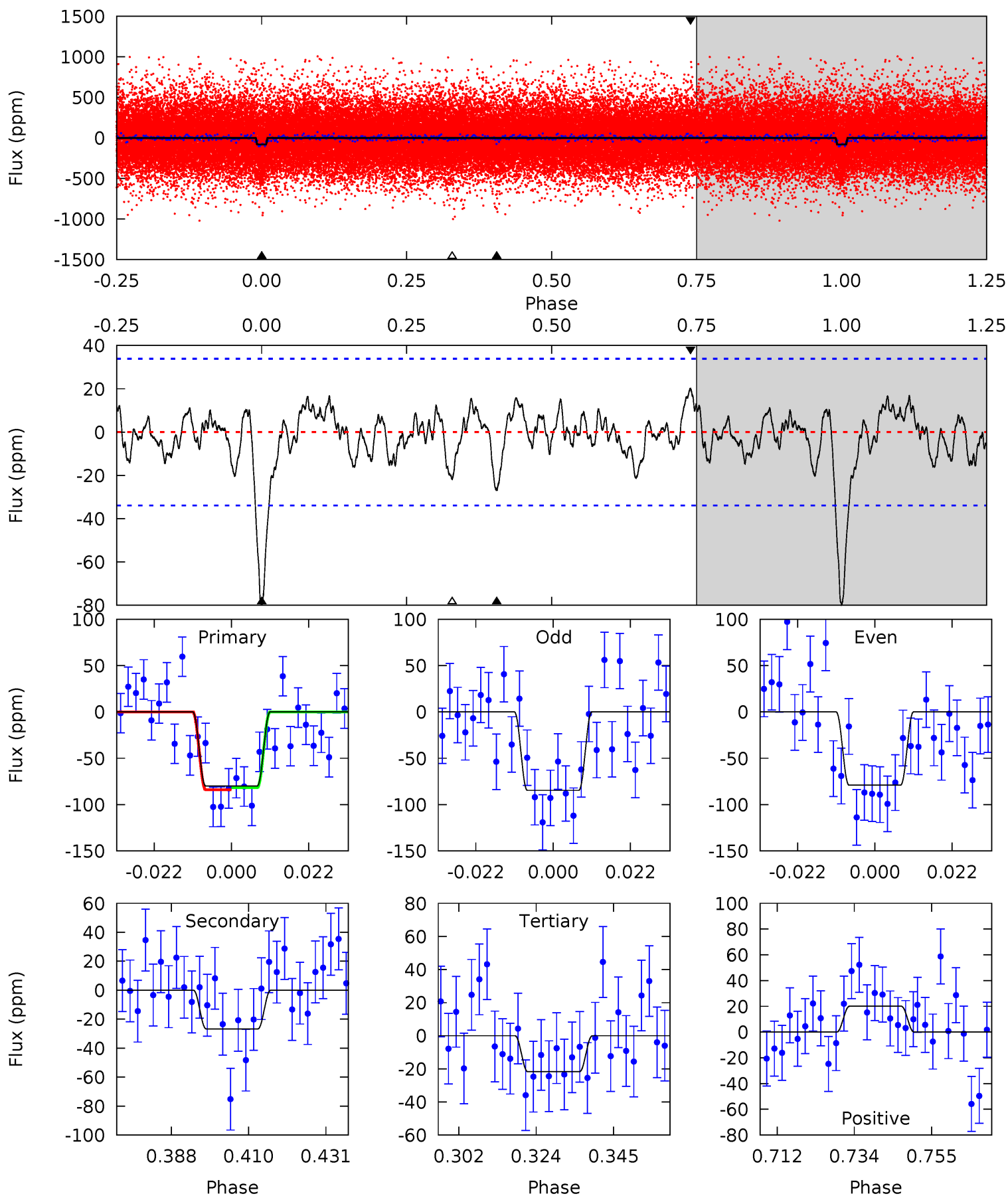
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.9	4.02	3.50	3.17	4.86	2.27	1.21	7.39	7.72	0.52	0.86	0.52	1.02	0.23	0.56



Alt Model-Shift Uniqueness Test

008613535-04, P = 15.593390 Days, E = 124.747392 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.5	3.85	3.13	2.89	4.88	2.30	1.19	8.36	8.61	0.72	0.96	0.40	1.29	0.20	0.15



Stellar Parameters For KIC 008613535

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6249^{+174}_{-217}	$4.428^{+0.054}_{-0.202}$	$-0.040^{+0.250}_{-0.300}$	$1.076^{+0.335}_{-0.112}$	$1.130^{+0.159}_{-0.159}$	$1.279^{+0.356}_{-0.665}$
	+3%/-3%	+1%/-5%	+625%/-750%	+31%/-10%	+14%/-14%	+28%/-52%
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 008613535-04 / KOI 2263.03

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-27 ± 7	$1.22^{+0.45}_{-0.45}$	1143^{+78}_{-59}	4665^{+1033}_{-552}	161^{+228}_{-81}
Alt.	-27 ± 7	$1.10^{+0.48}_{-0.44}$	1143^{+92}_{-60}	4814^{+1226}_{-658}	181^{+336}_{-93}

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 $A_{obs} \gg 1.0$

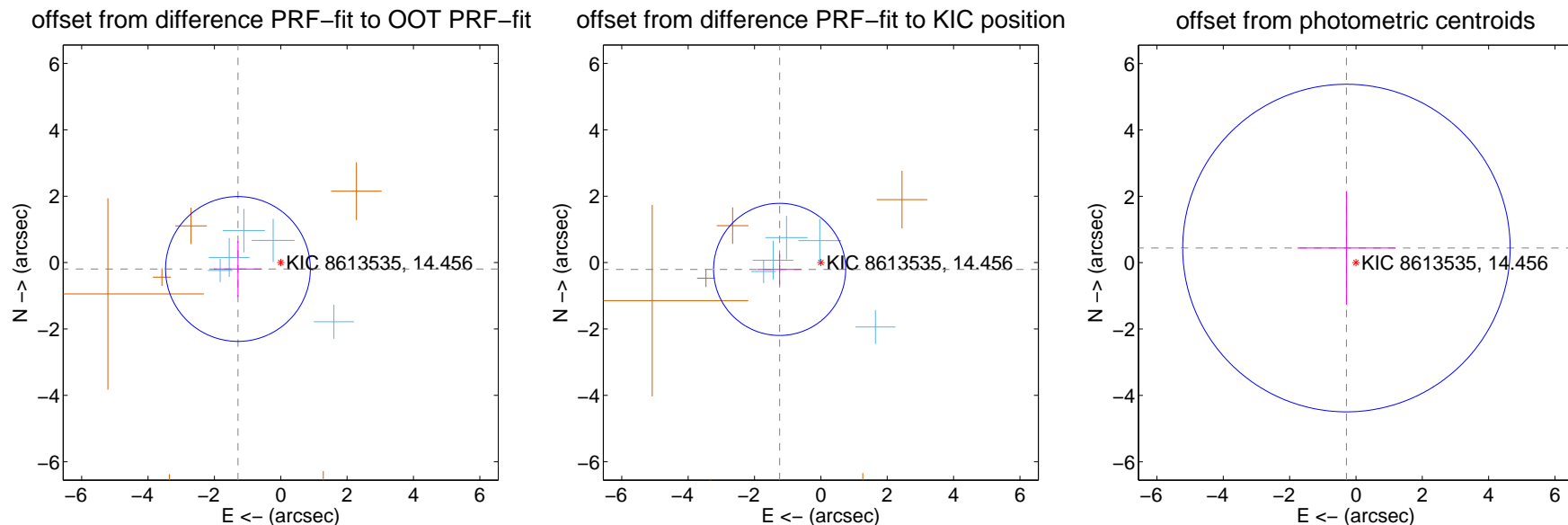
DV Centroid Data

Supplemental centroid analysis for 008613535-04. Kepler magnitude: 14.46. Transit SNR 9.03

There are 5 quarters with good PRF difference image offsets

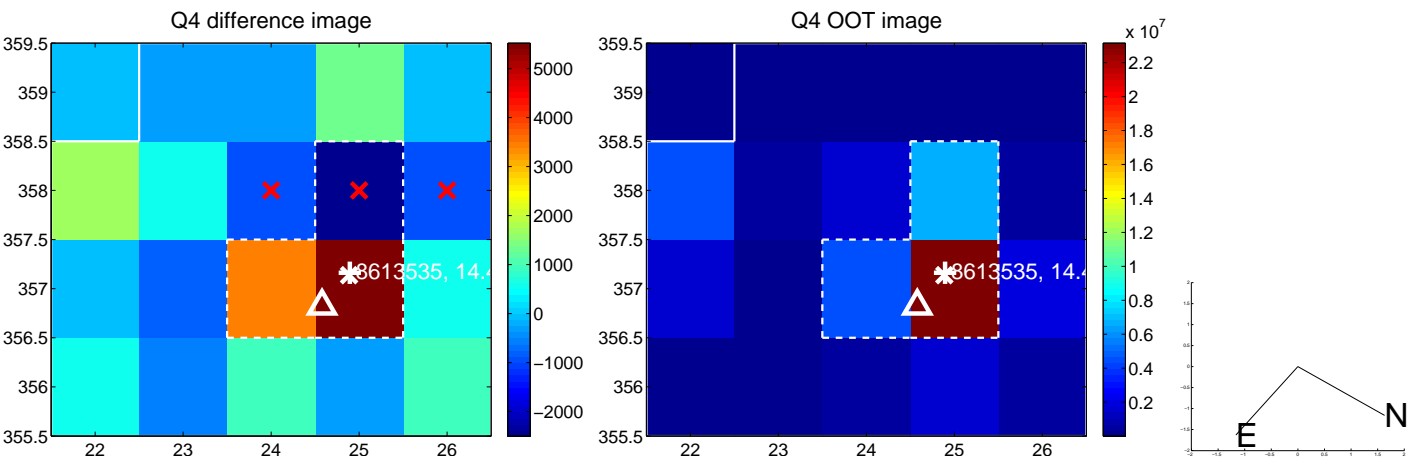
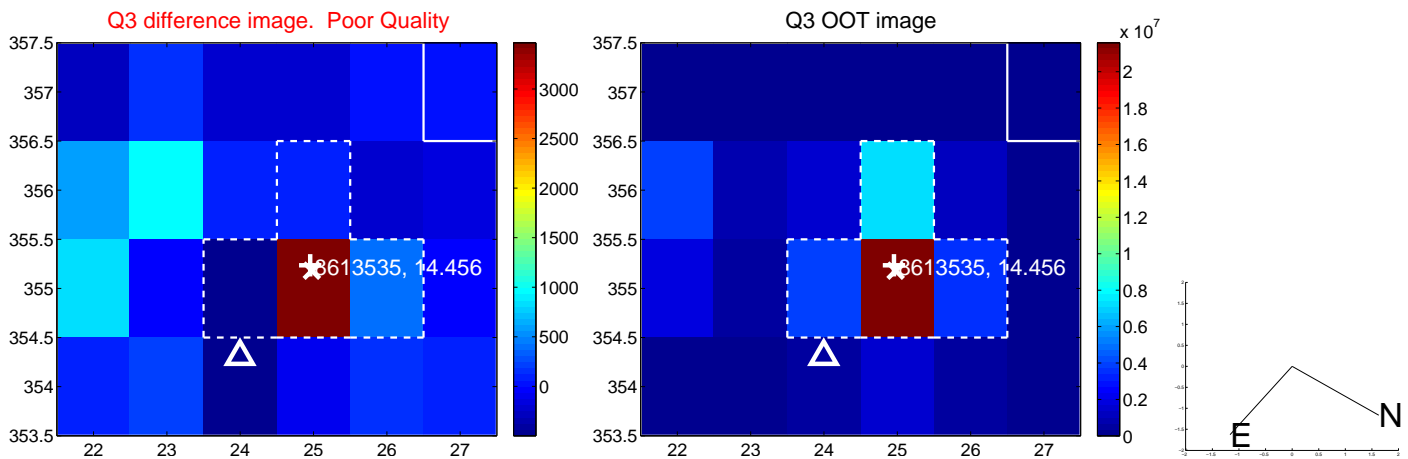
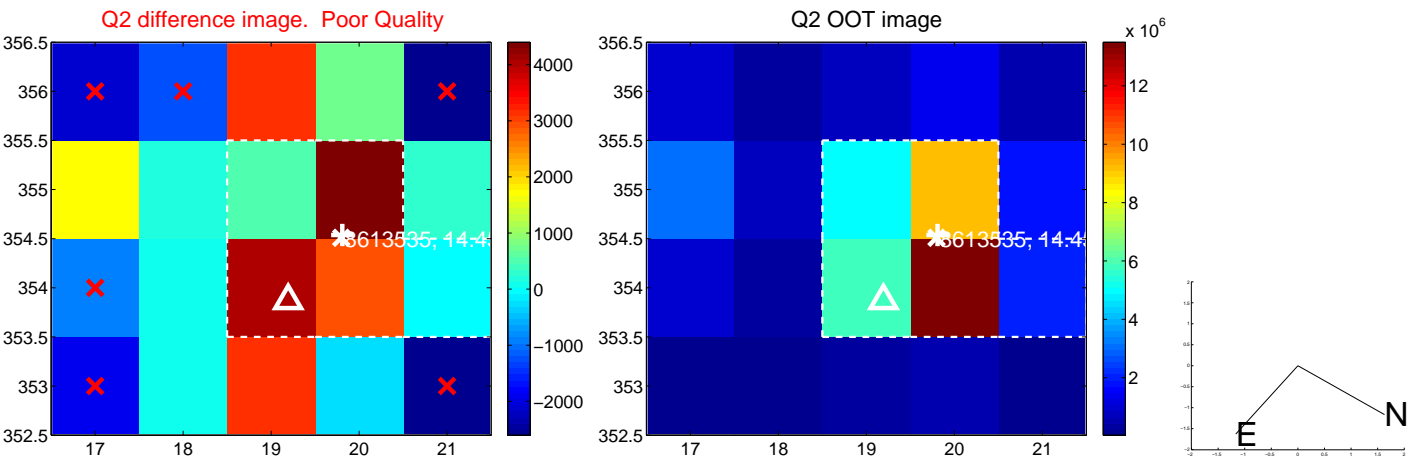
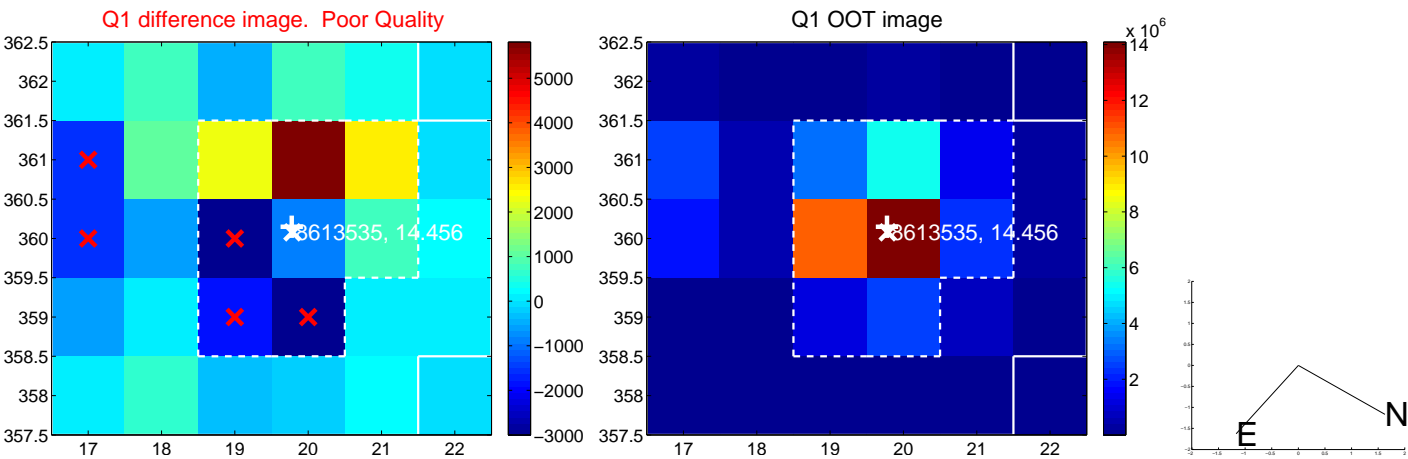
The direct PRF centroid is offset from the target star catalog position by about 0.23 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.305 ± 0.727	1.79	1.290 ± 0.726	-0.193 ± 0.844
PRF-fit source offset from KIC position	1.260 ± 0.663	1.90	1.243 ± 0.668	-0.205 ± 0.456
photometric centroid source offset	0.53 ± 1.65	0.32	0.29 ± 1.48	0.44 ± 1.71

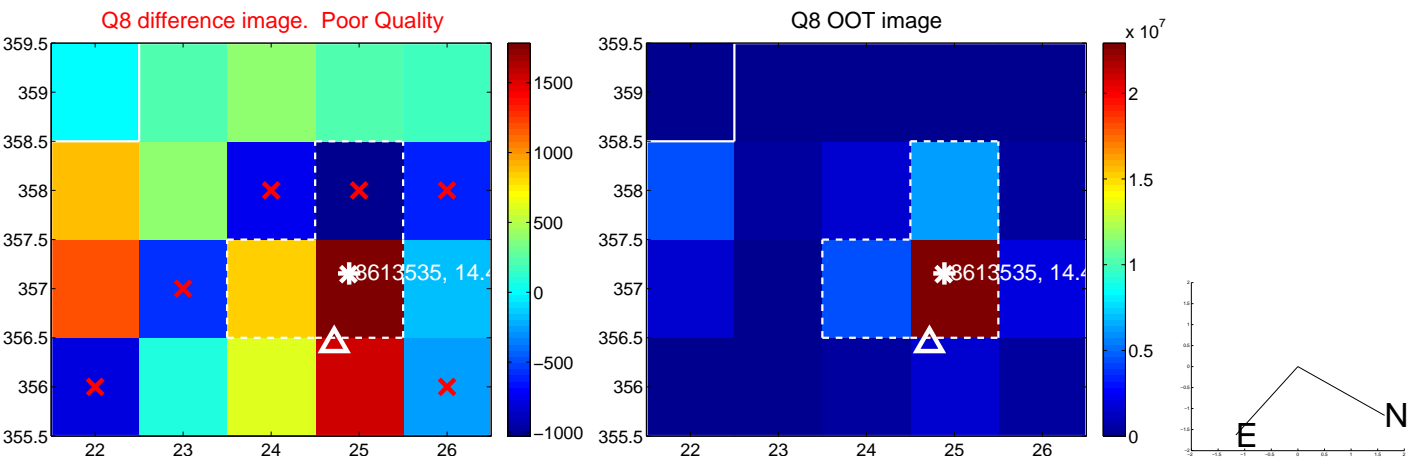
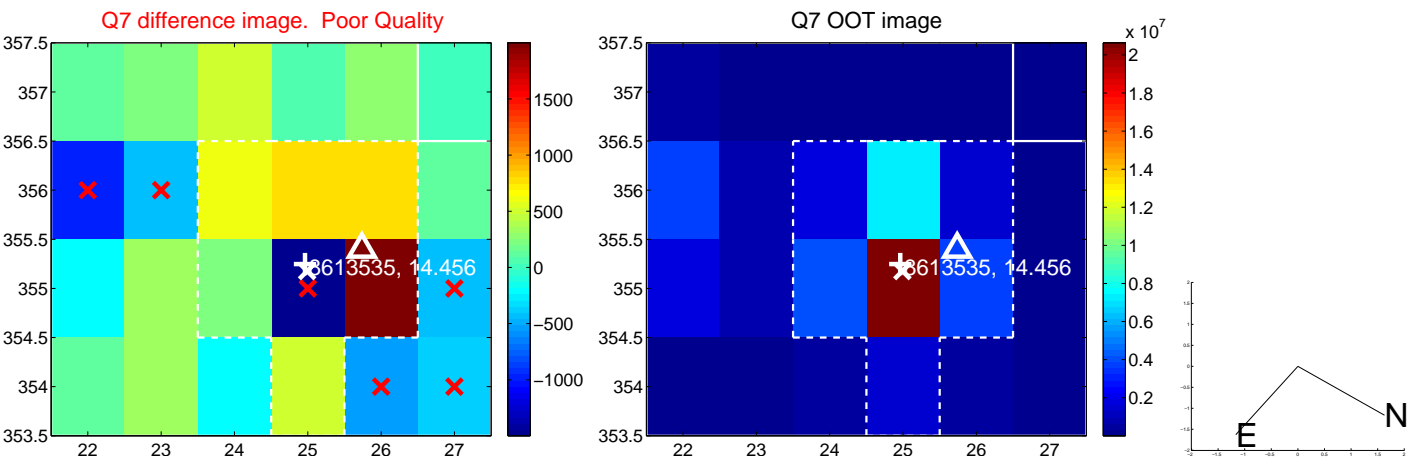
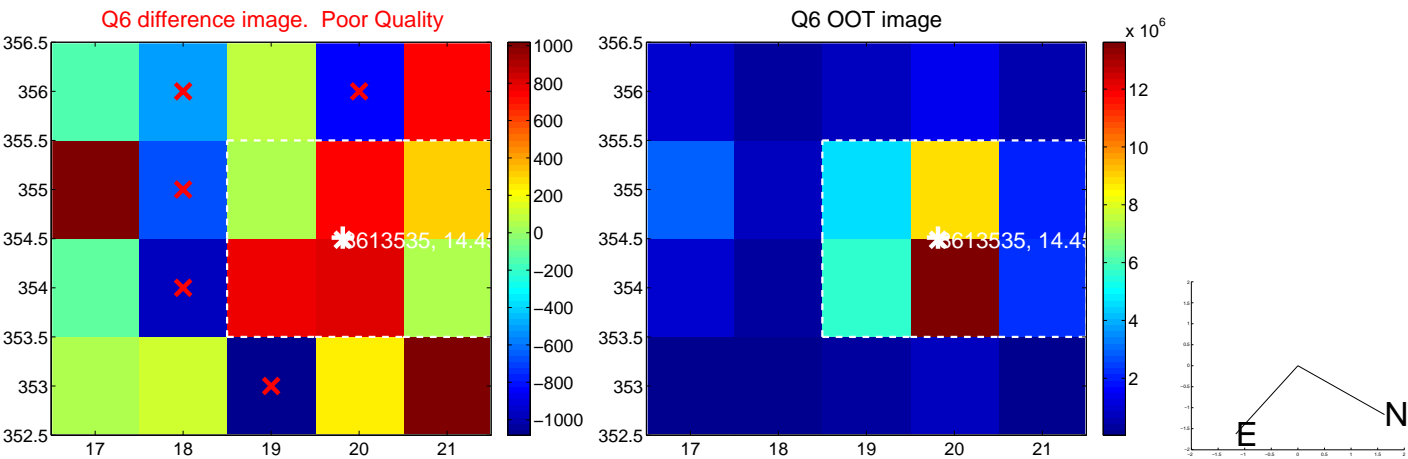
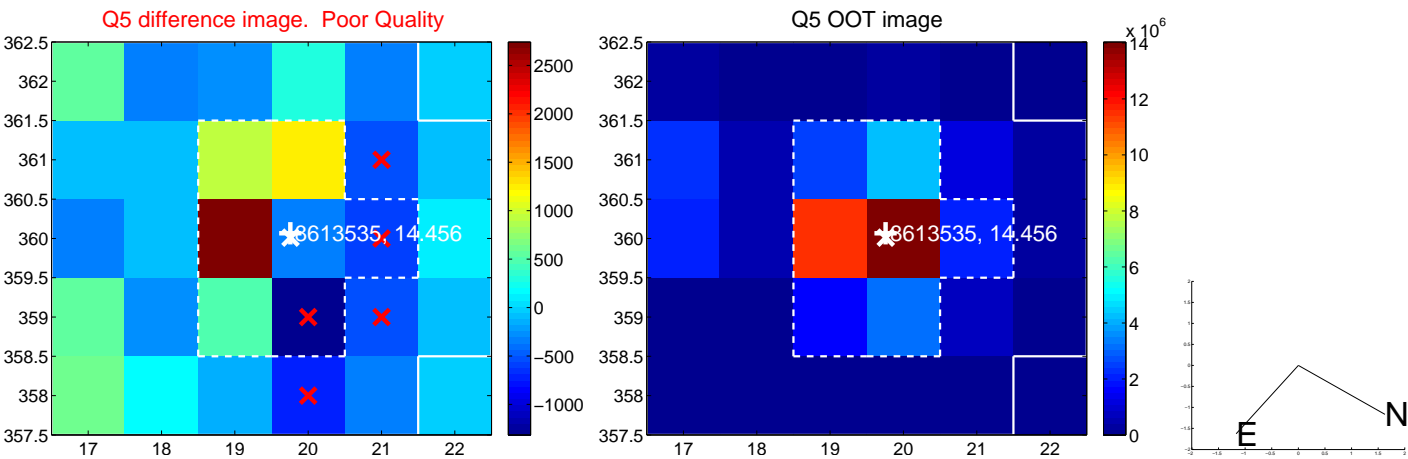


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

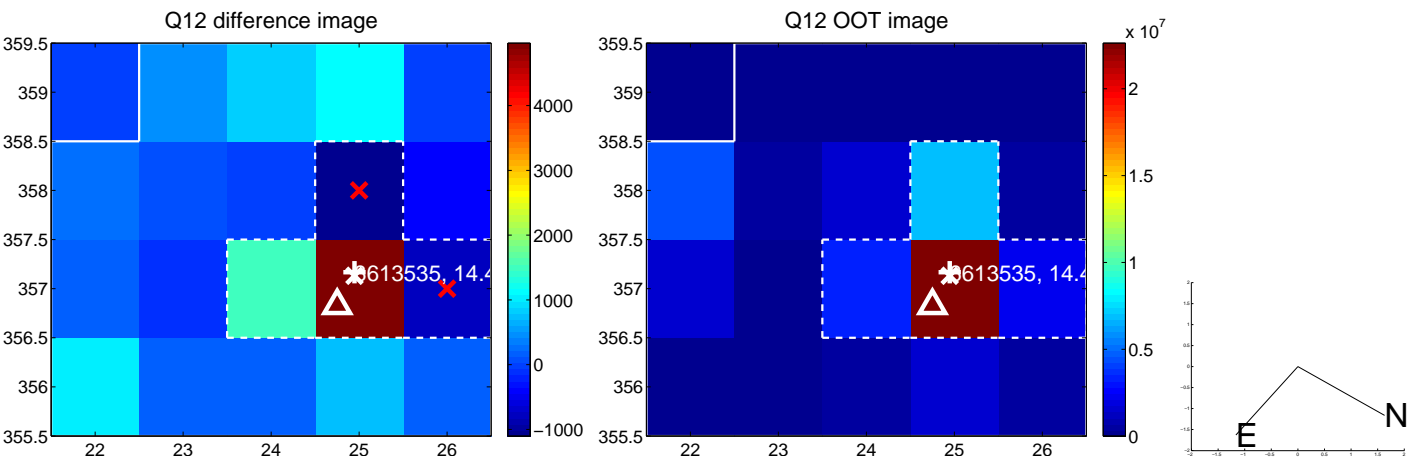
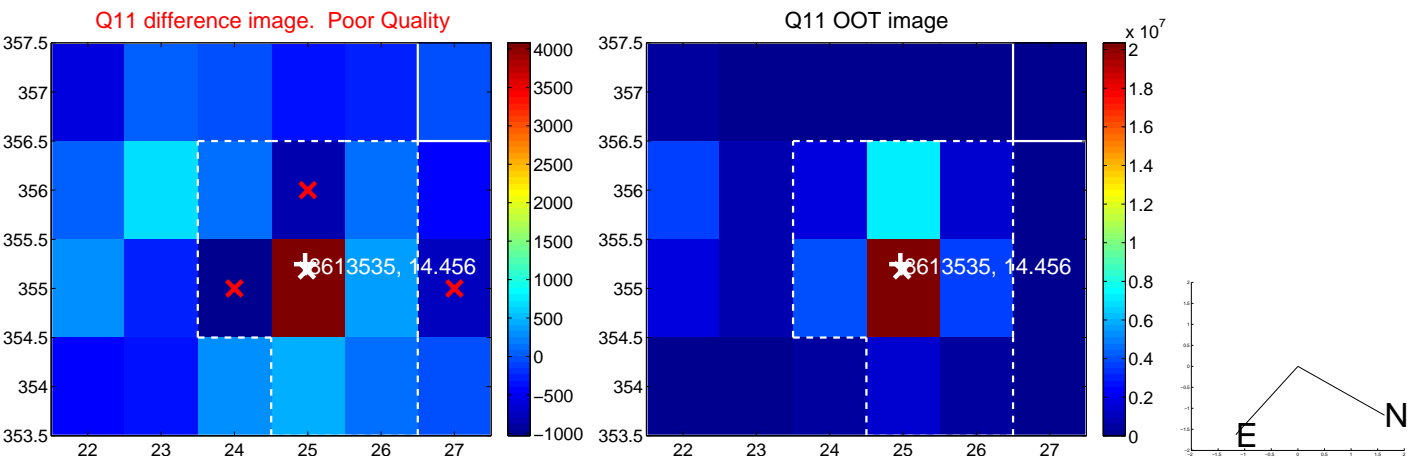
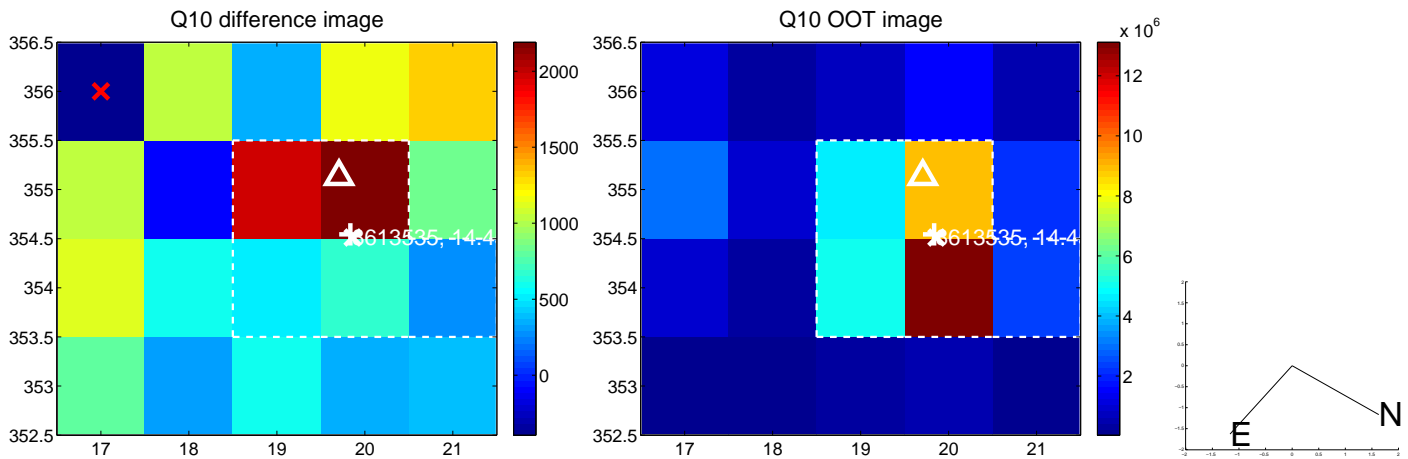
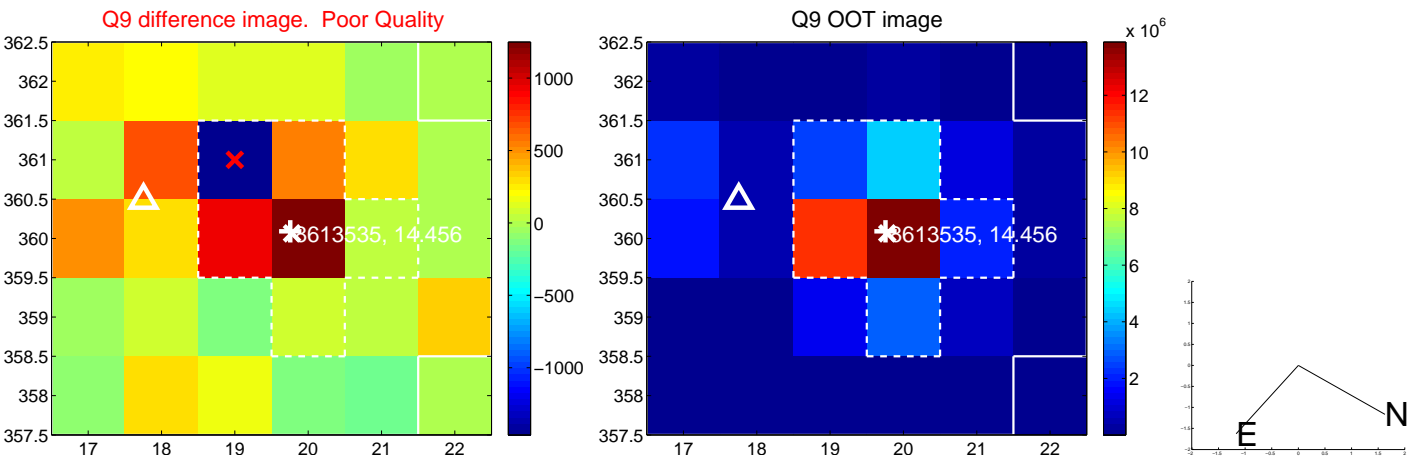
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



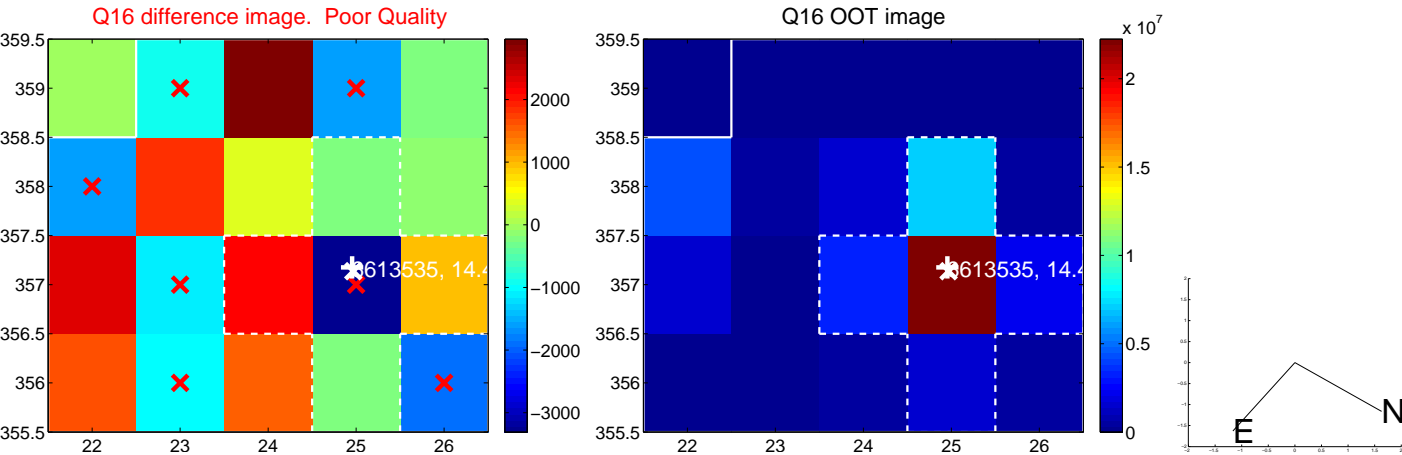
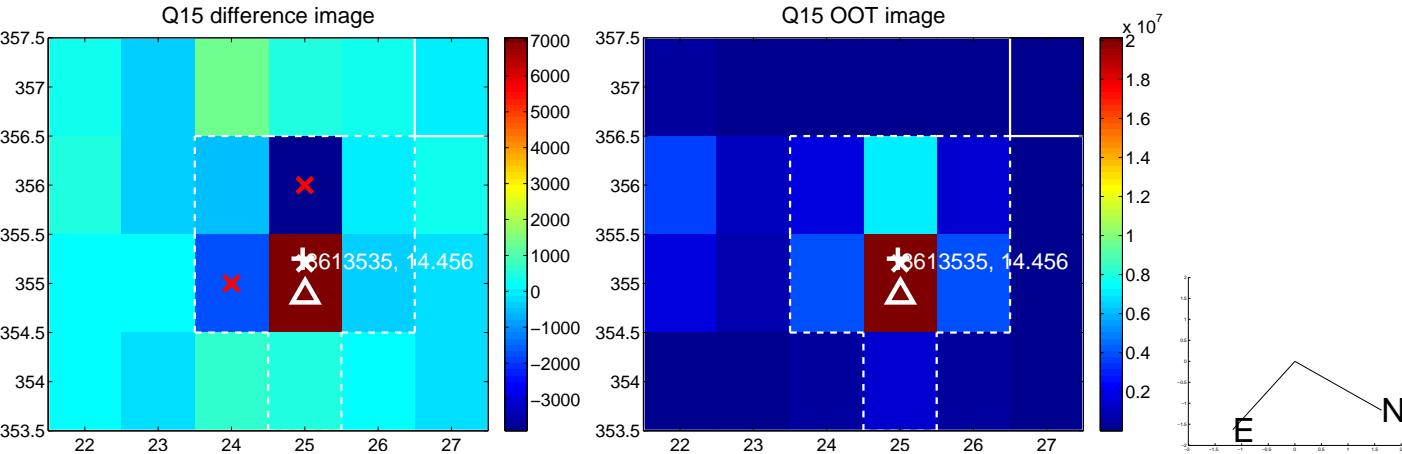
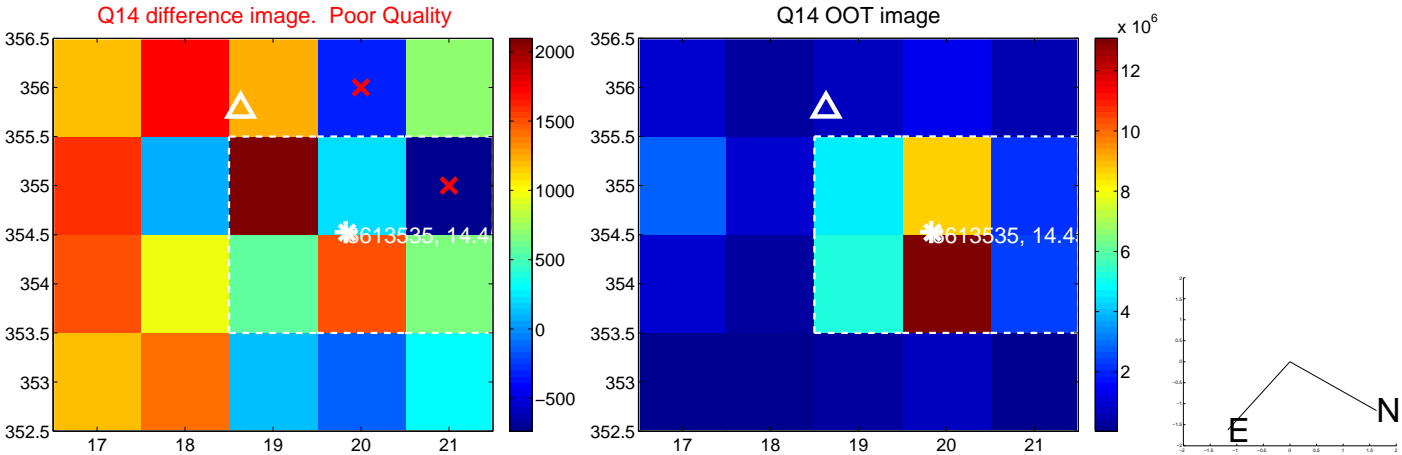
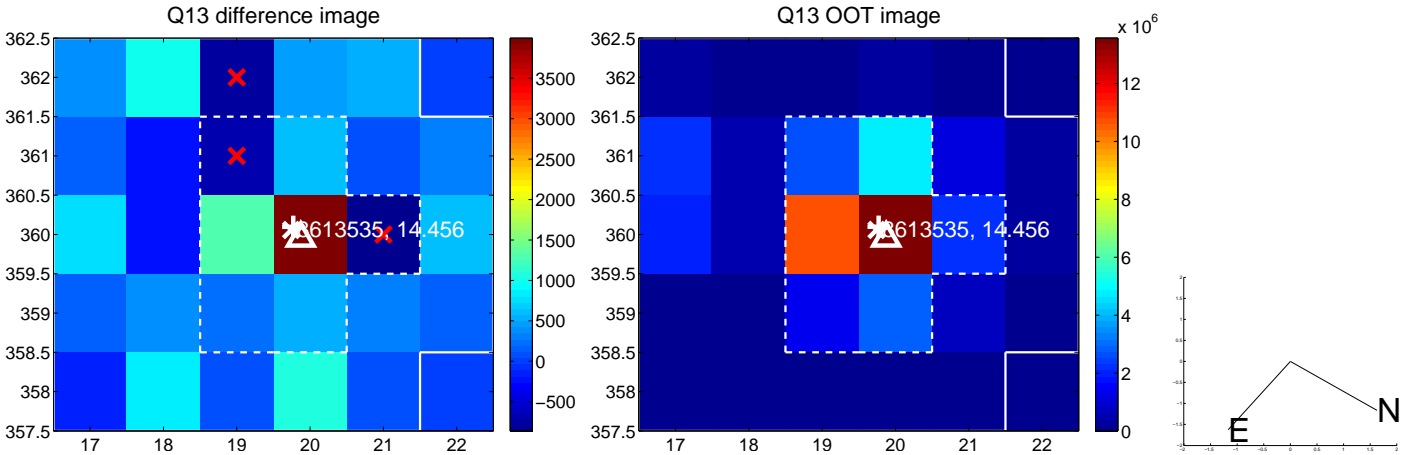
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



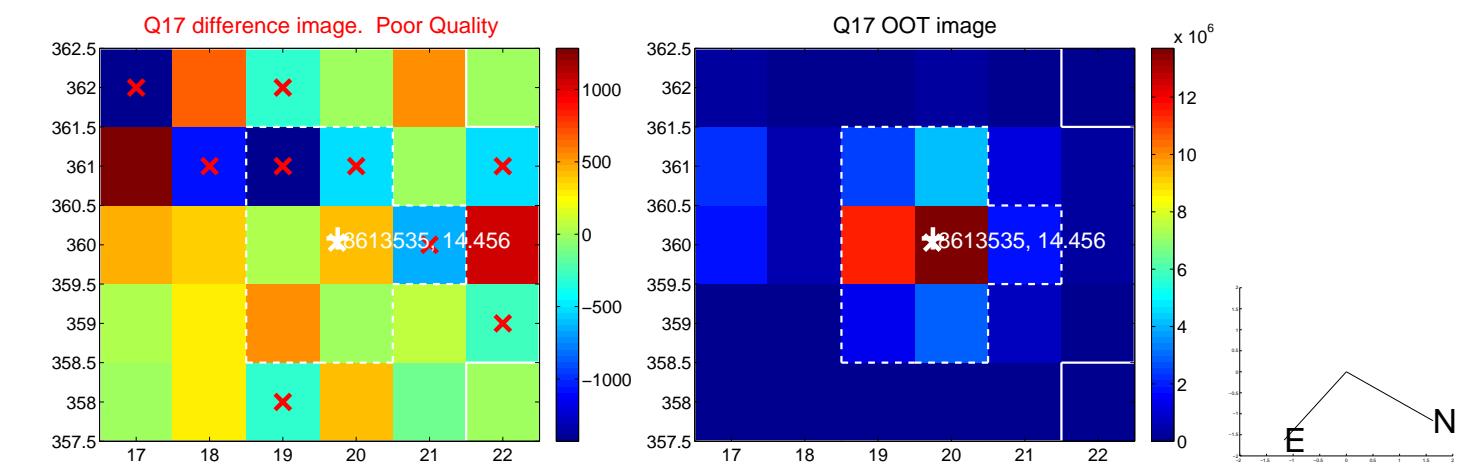
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



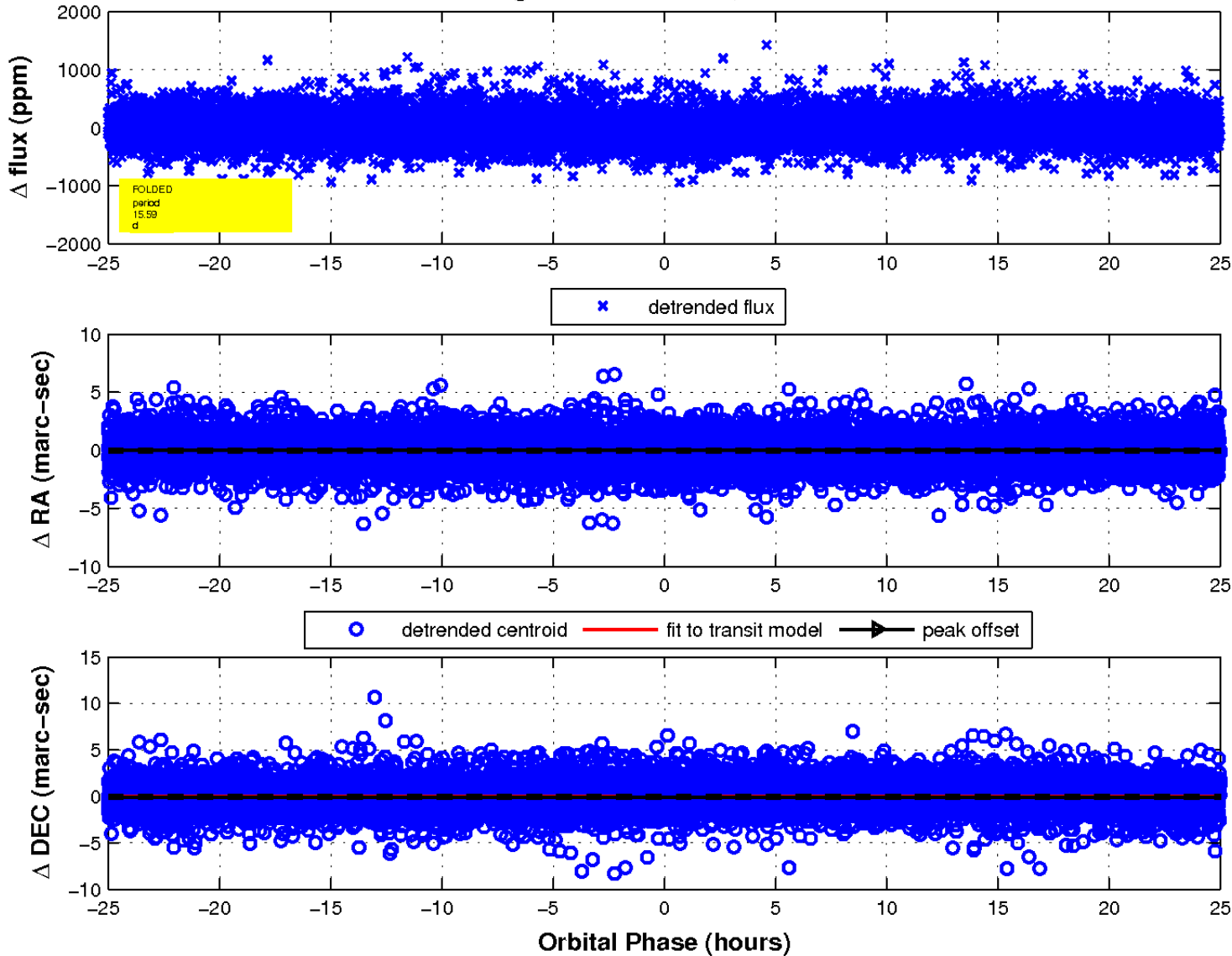
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 4 of 4



UKIRT Image

Declination

