

KIC 011151677

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})
011151677-01	OBS	No	0.720446	131.664668	275.5	0.833	22.3	26.6	1.06	6304	2.11	5964.14
011151677-02	OBS	4308.01	0.720445	132.024360	281.8	0.906	30.7	29.2	1.06	6304	2.13	5964.14

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011151677-01	OBS	FP	0.00	1	0	1	0	LPP_ALT—MOD_NONUNIQ_ALT—CENT_RESOLVED_OFFSET
011151677-02	OBS	FP	0.00	1	0	1	0	LPP_ALT—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_RESOLVED_OFFSET

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.

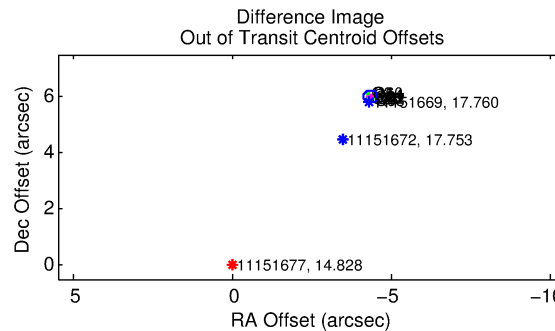
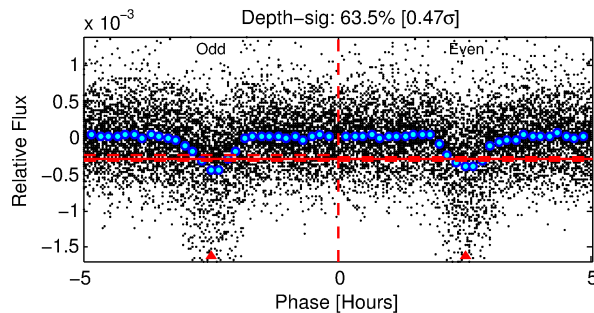
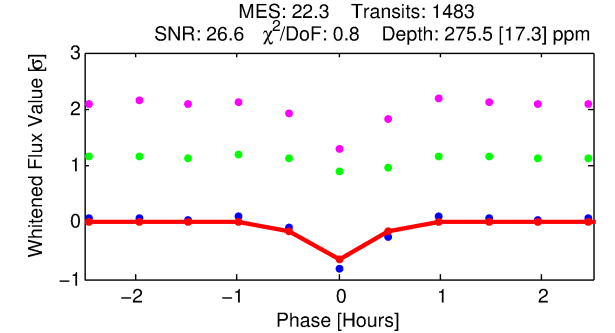
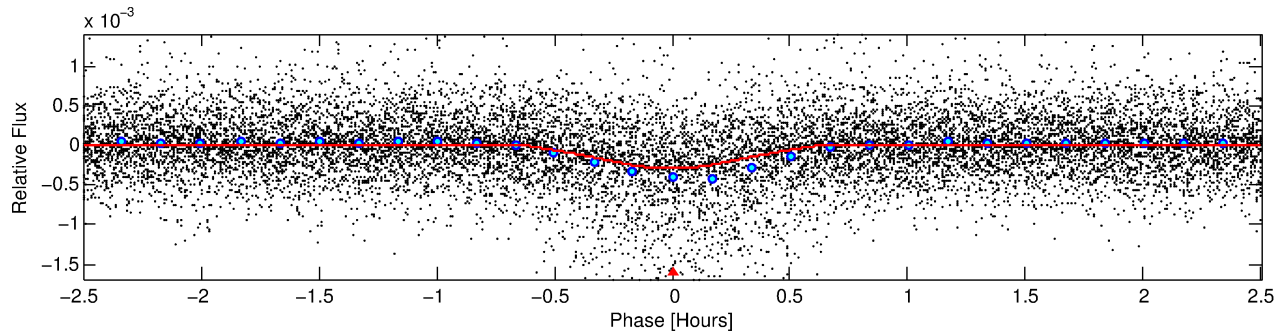
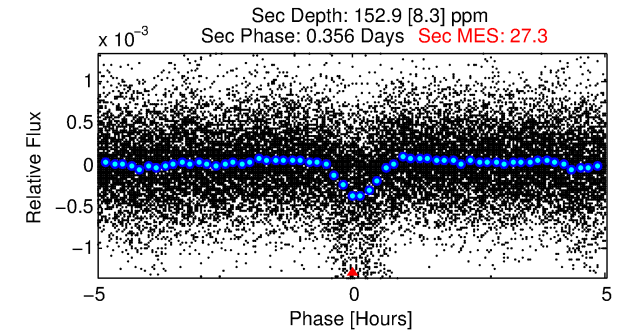
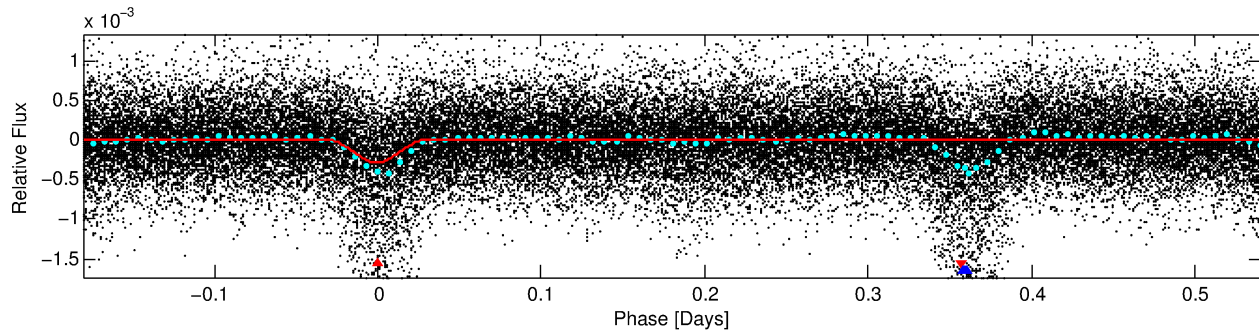
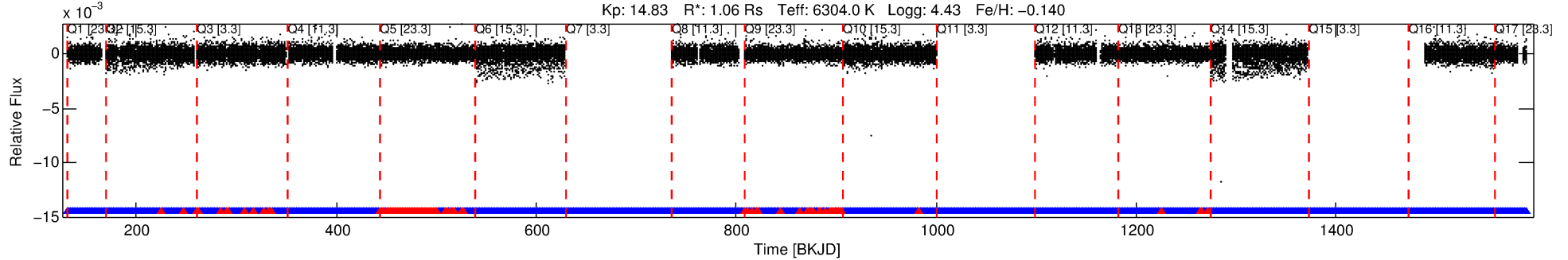
Ephemeris Match Information For 011151677-01

No Significant Match Found

DV One-Page Summary

KIC: 11151677 Candidate: 1 of 2 Period: 0.720 d
KOI: K04308 Corr: No Ephemeris Match

Kp: 14.83 R*: 1.06 Rs Teff: 6304.0 K Logg: 4.43 Fe/H: -0.140



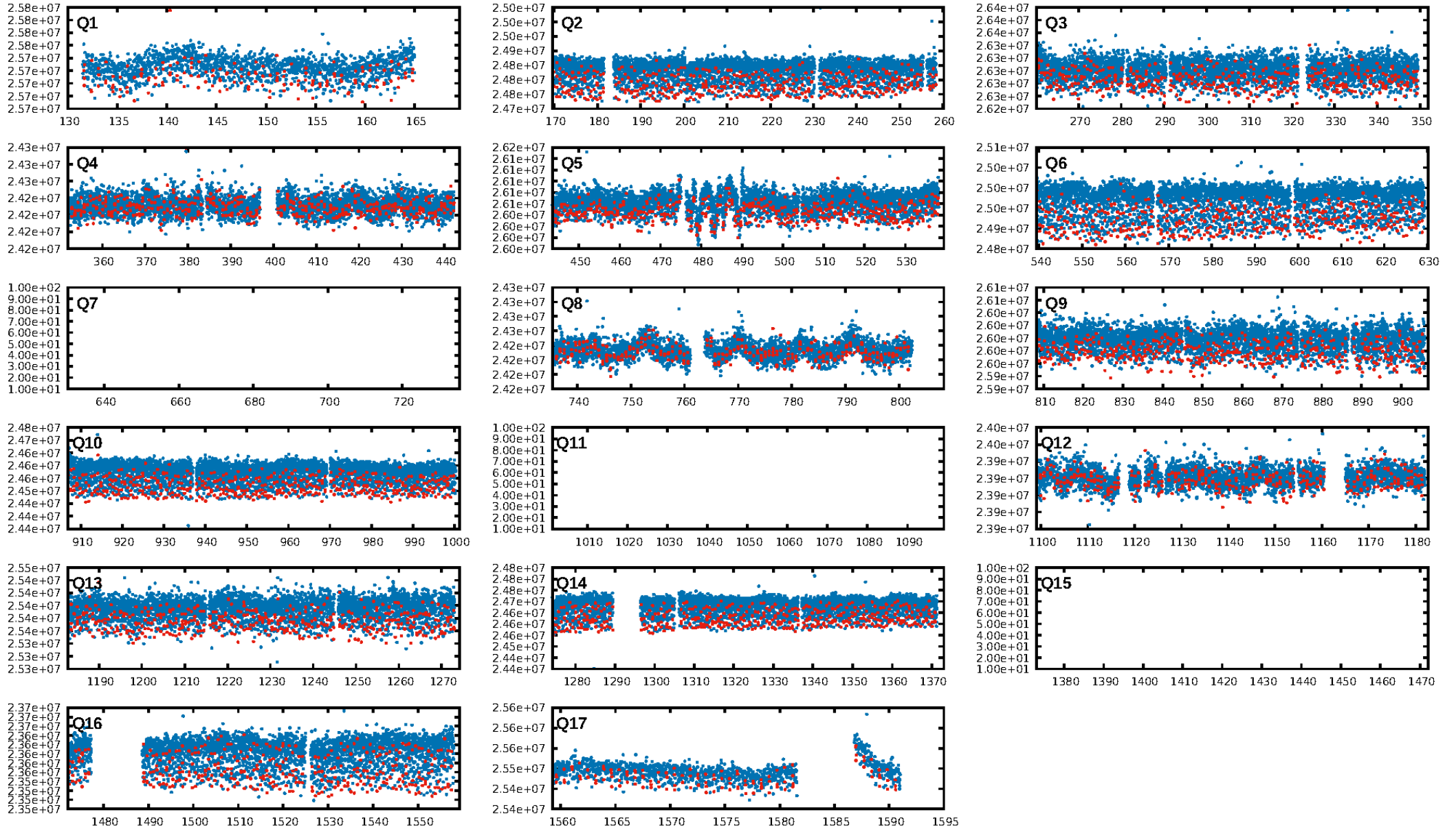
DV Fit Results:

Period = 0.72045 [0.00000] d
Epoch = 131.6647 [0.0005] BKJD
Rp/R* = 0.0183 [0.0039]
a/R* = 3.13 [3.20]
b = 0.91 [0.21]
Seff = 5964.14 [2600.75]
Teq = 2241 [244] K
Rp = 2.11 [0.85] Re
a = 0.0163 [0.0047] AU
Ag = 5.01 [2.97] [1.35σ]
Teffp = 5184 [580] K [4.67σ]

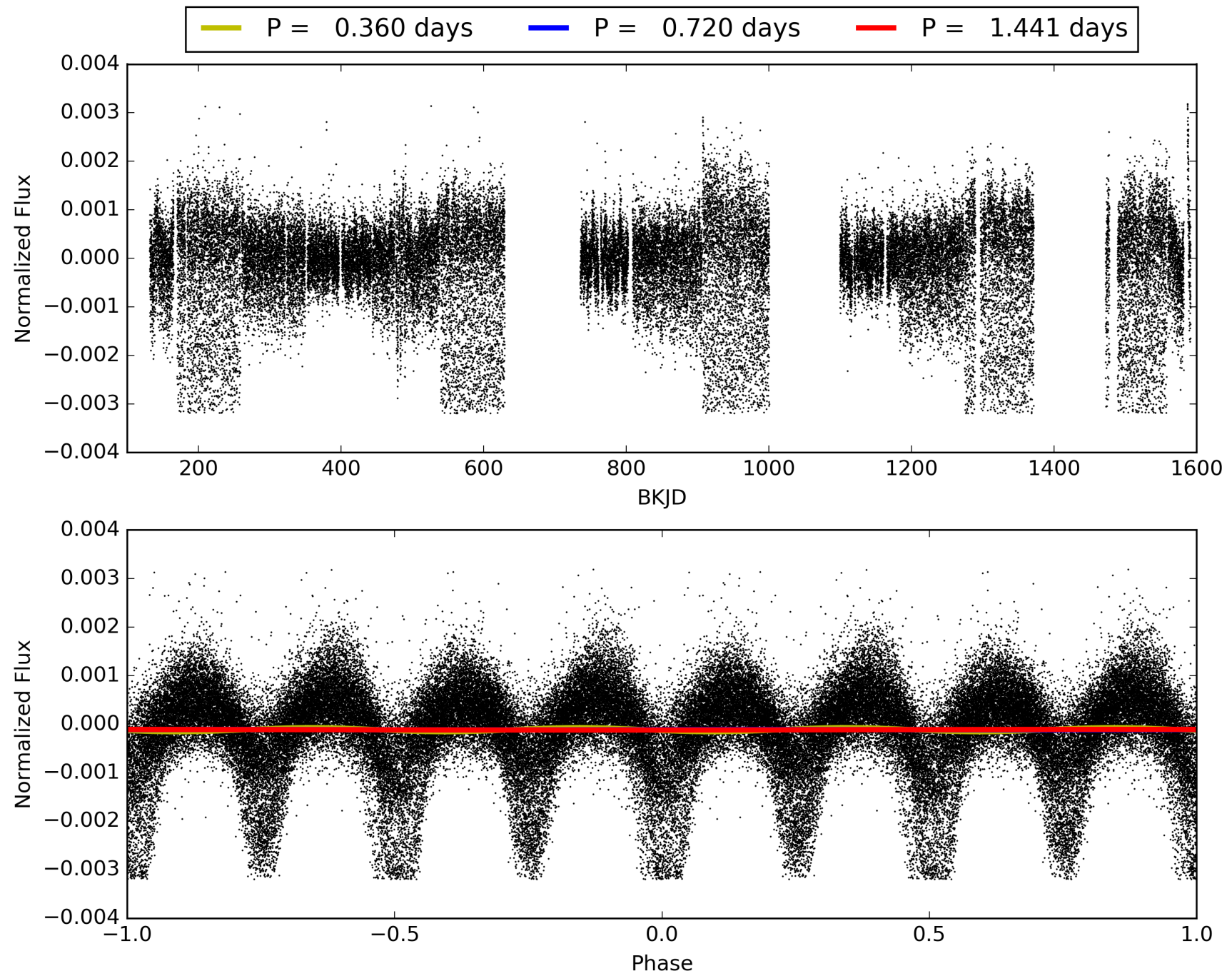
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.92 [1283/1399]
GhostDiagnostic-chr: -0.273
Centroid-sig: 0.0%
Centroid-so: N/A
OotOffset-rm: 7.404 arcsec [103.69σ]
KicOffset-rm: 7.571 arcsec [109.10σ]
OotOffset-st: 4/1/4/5 [14]
KicOffset-st: 4/1/4/5 [14]
DiffImageQuality-fgm: 1.00 [14/14]
DiffImageOverlap-fno: 1.00 [14/14]

TCE 011151677-01, PDC Light Curves

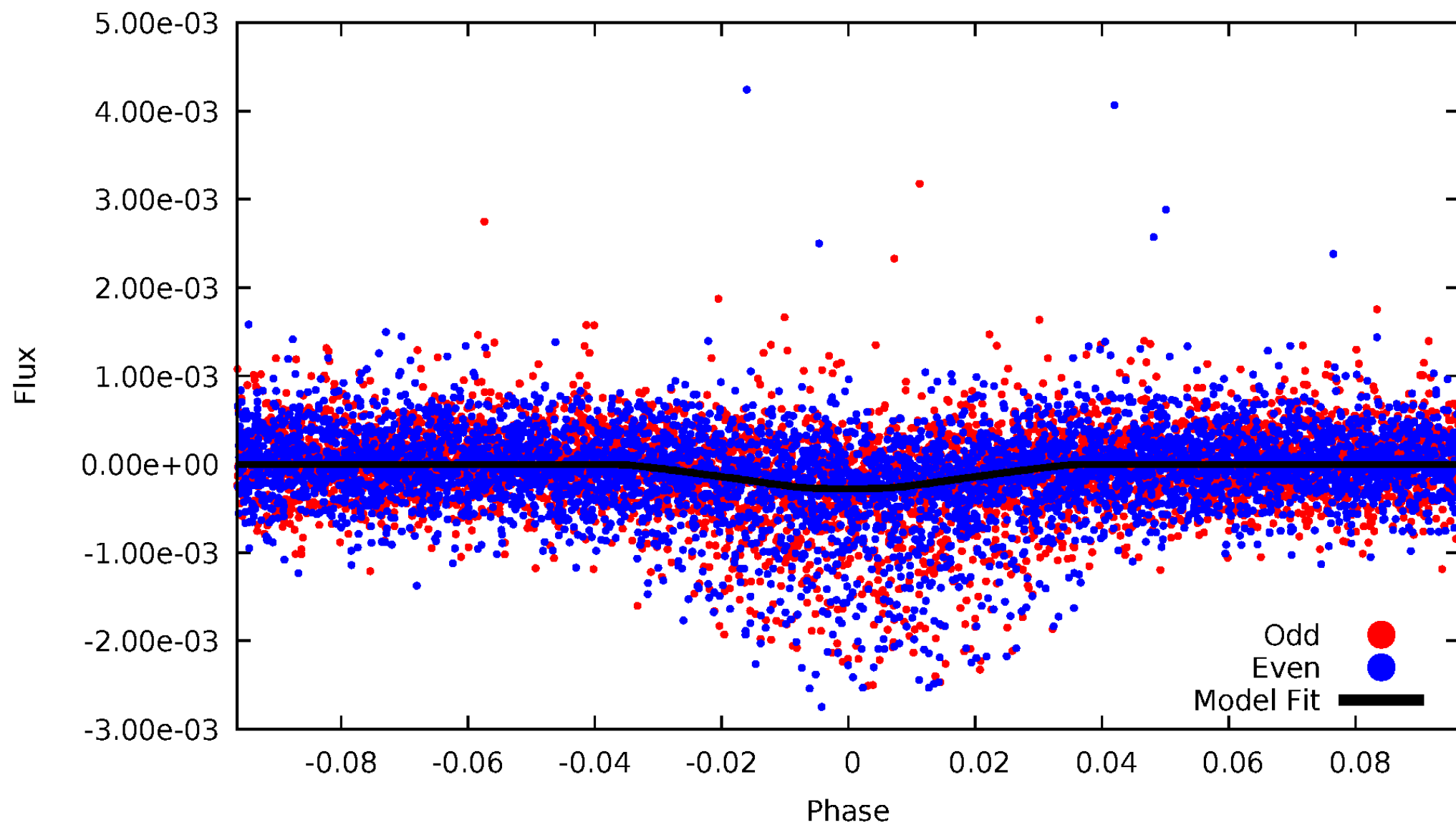


TCE 011151677-01



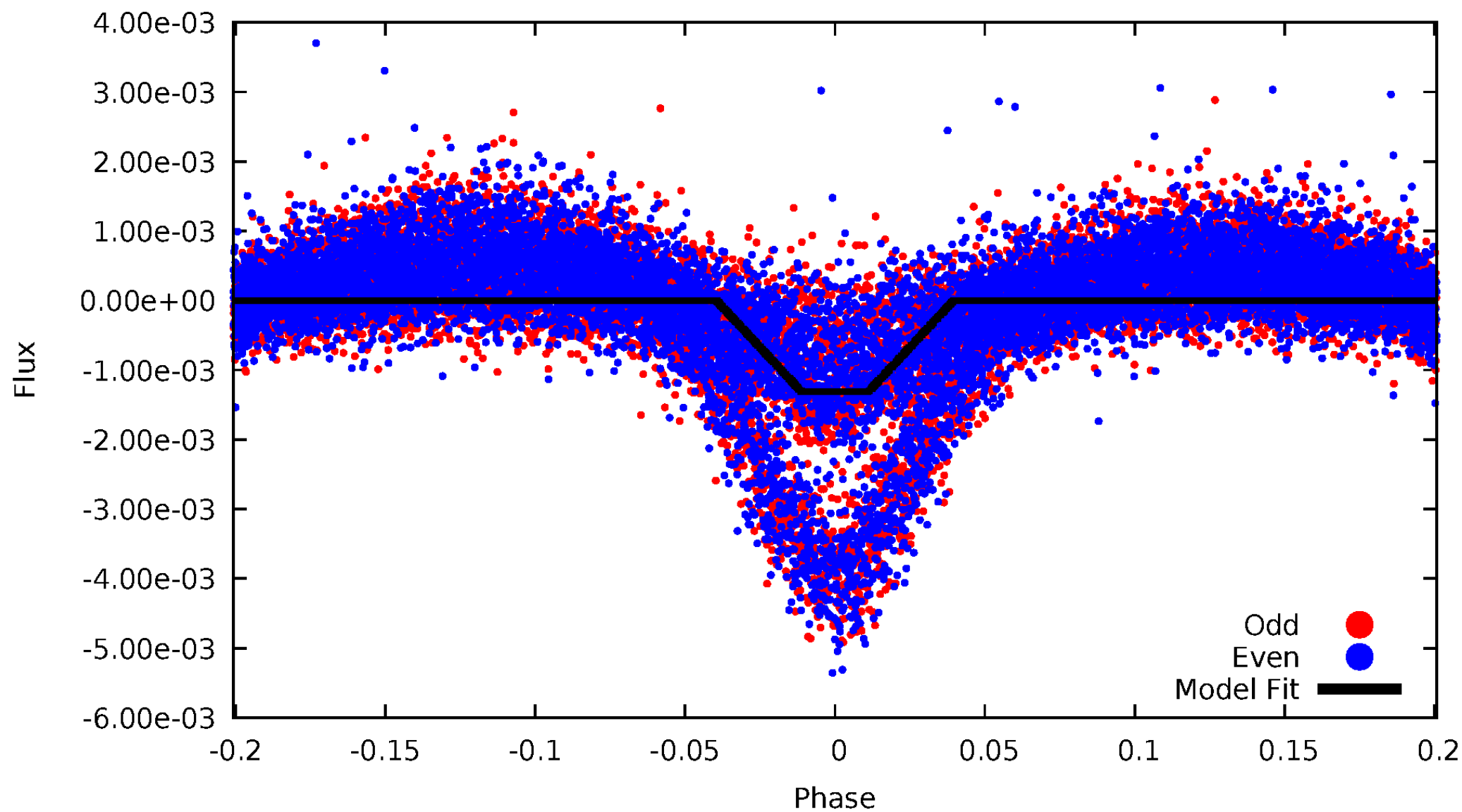
DV Odd/Even

TCE 011151677-01



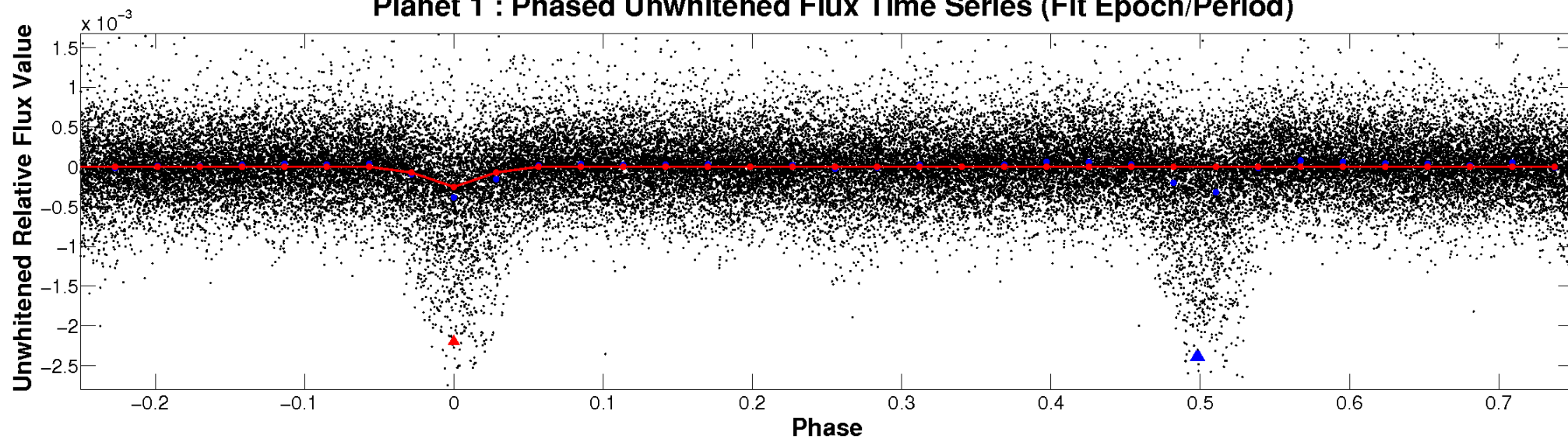
ALT Odd/Even

TCE 011151677-01

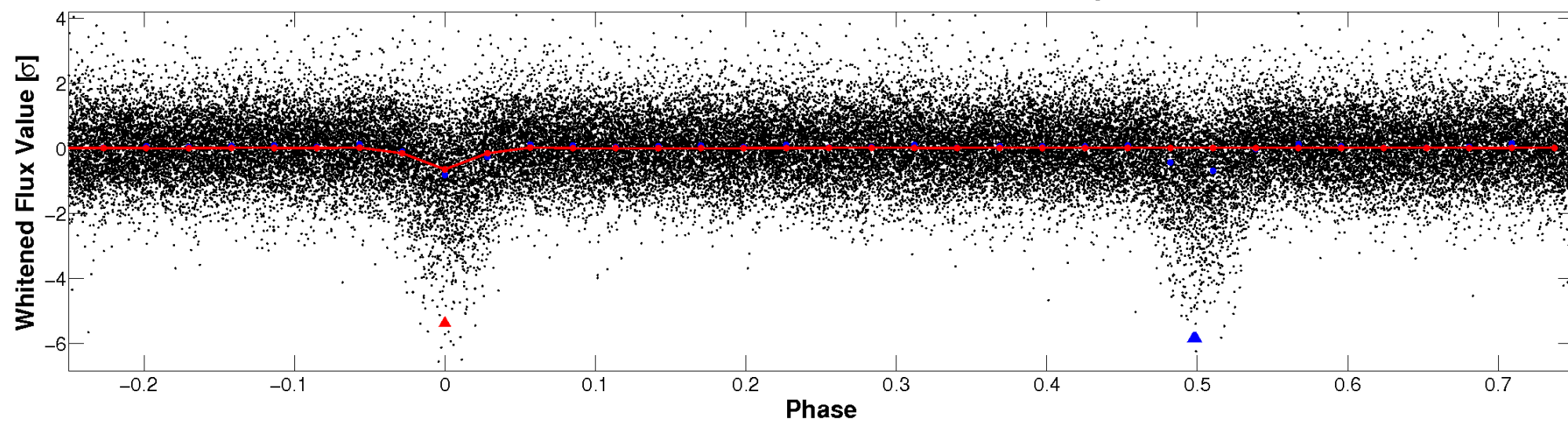


Non-Whitened Vs. Whitened Light Curve

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

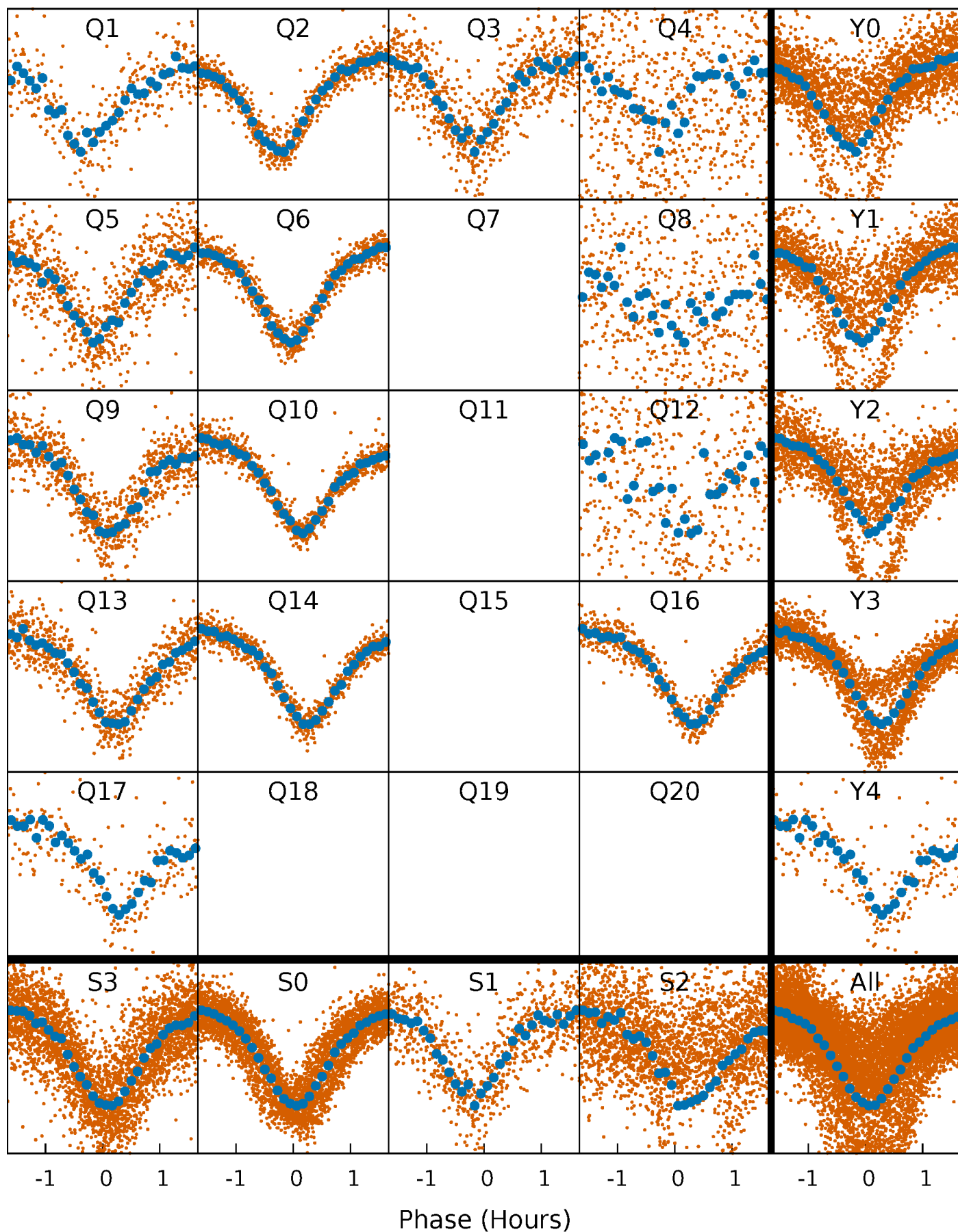


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



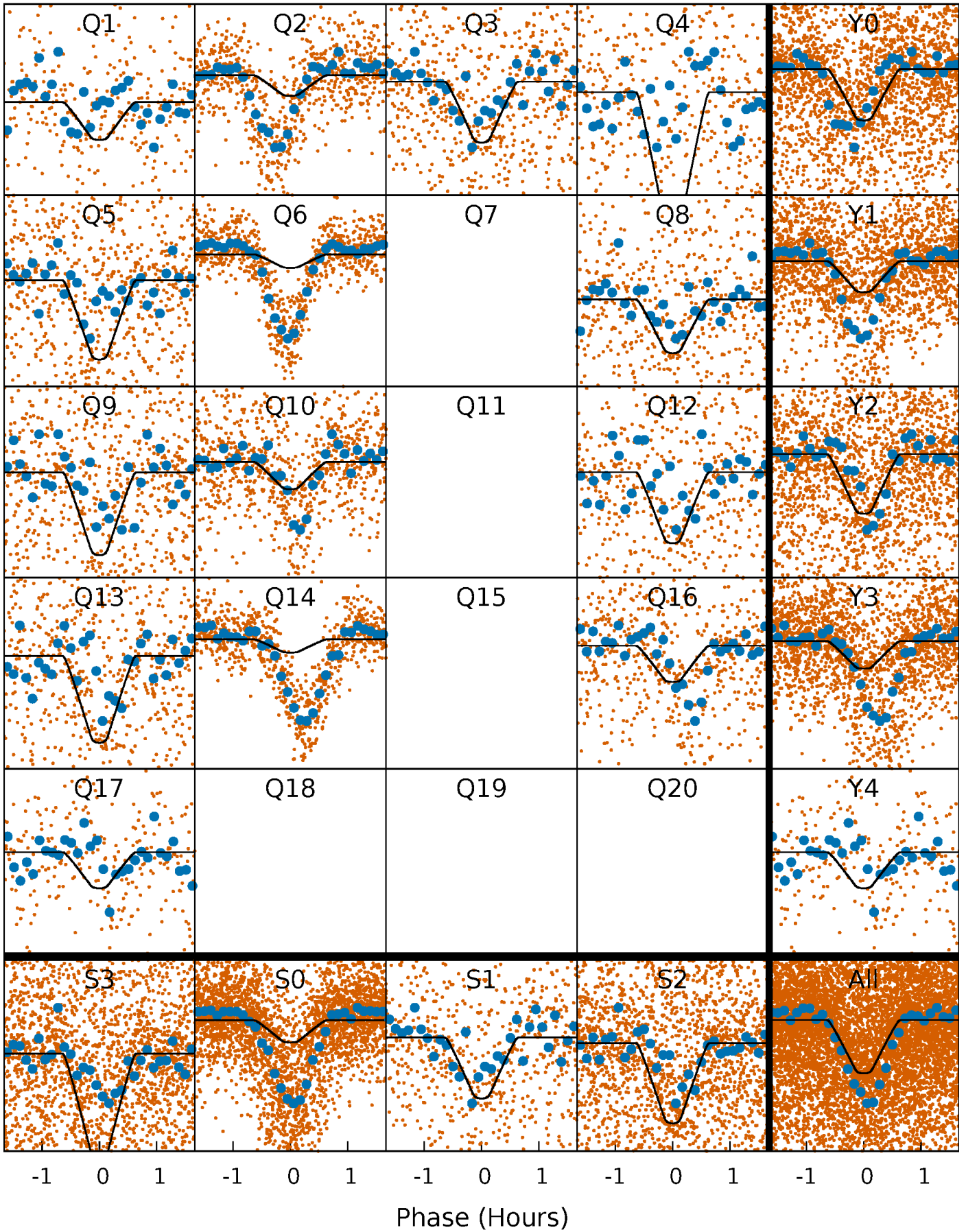
PDC Quarter-Phased Transit Curves

TCE 011151677-01 P= 0.720446 Days $T_0=131.664668$ (BKJD)



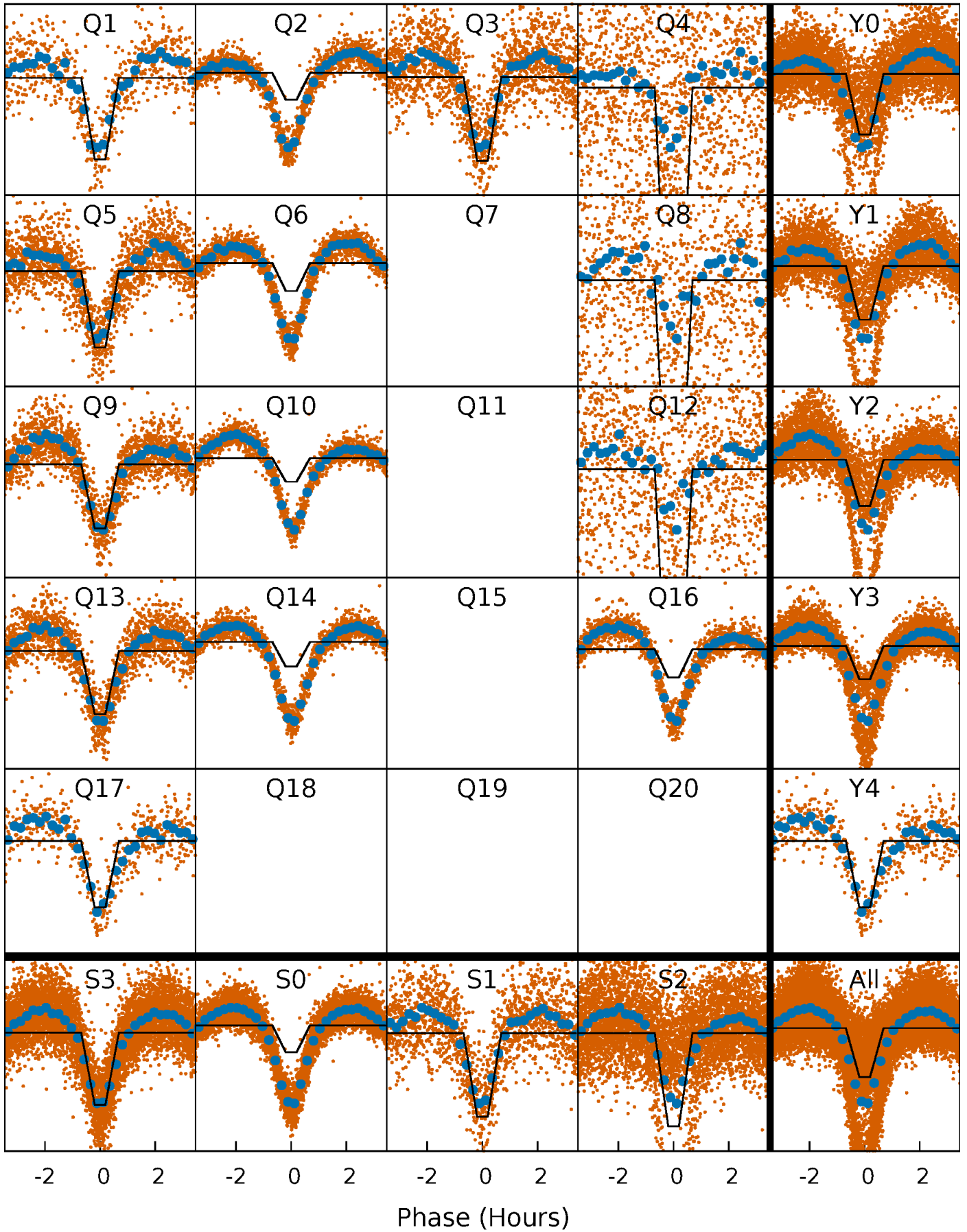
DV Quarter-Phased Transit Curves

TCE 011151677-01 P= 0.720446 Days $T_0=131.664668$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

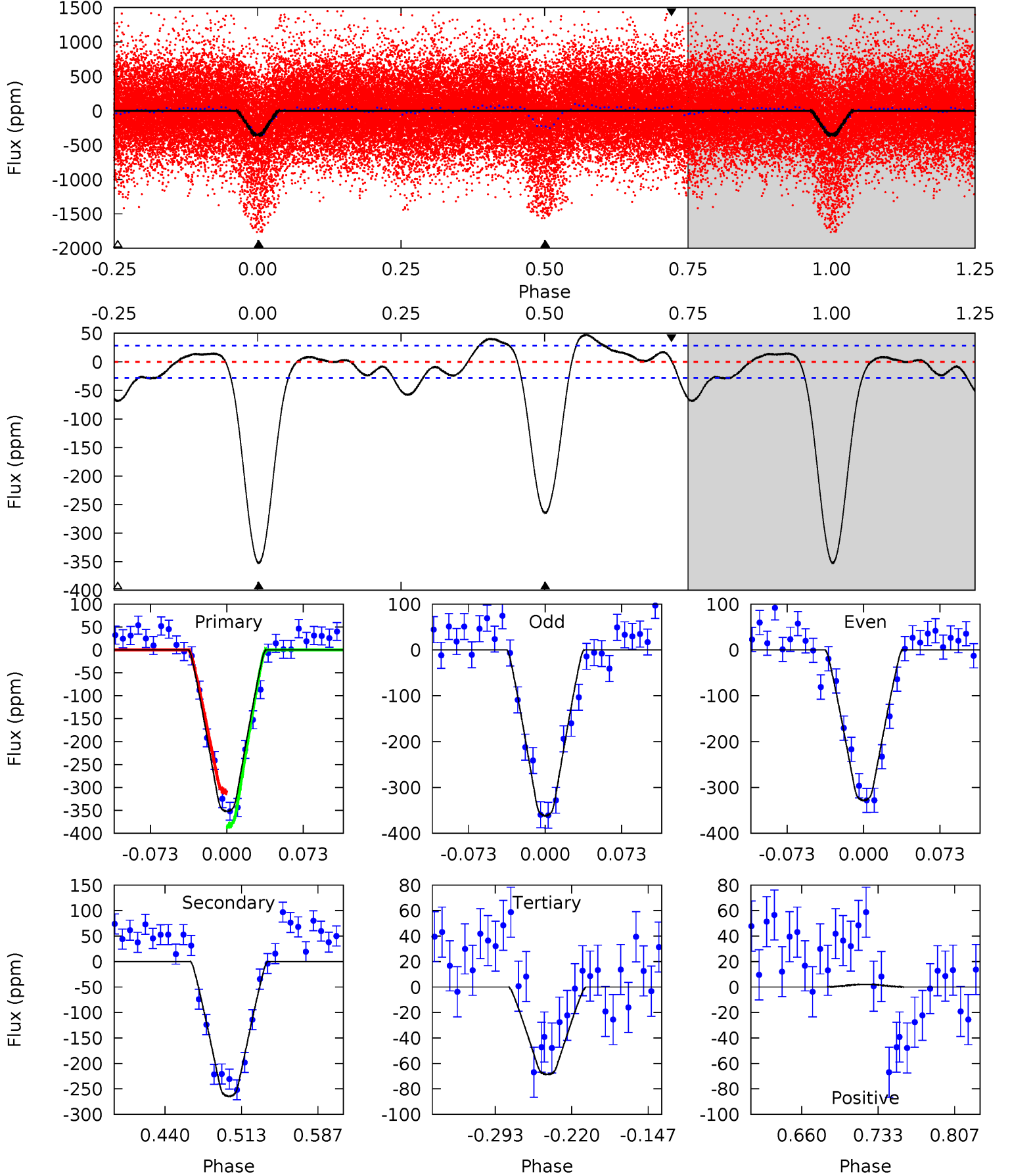
TCE 011151677-01 P= 0.720457 Days $T_0=131.656312$ (BKJD)



DV Model-Shift Uniqueness Test

011151677-01, P = 0.720446 Days, E = 130.944222 Days

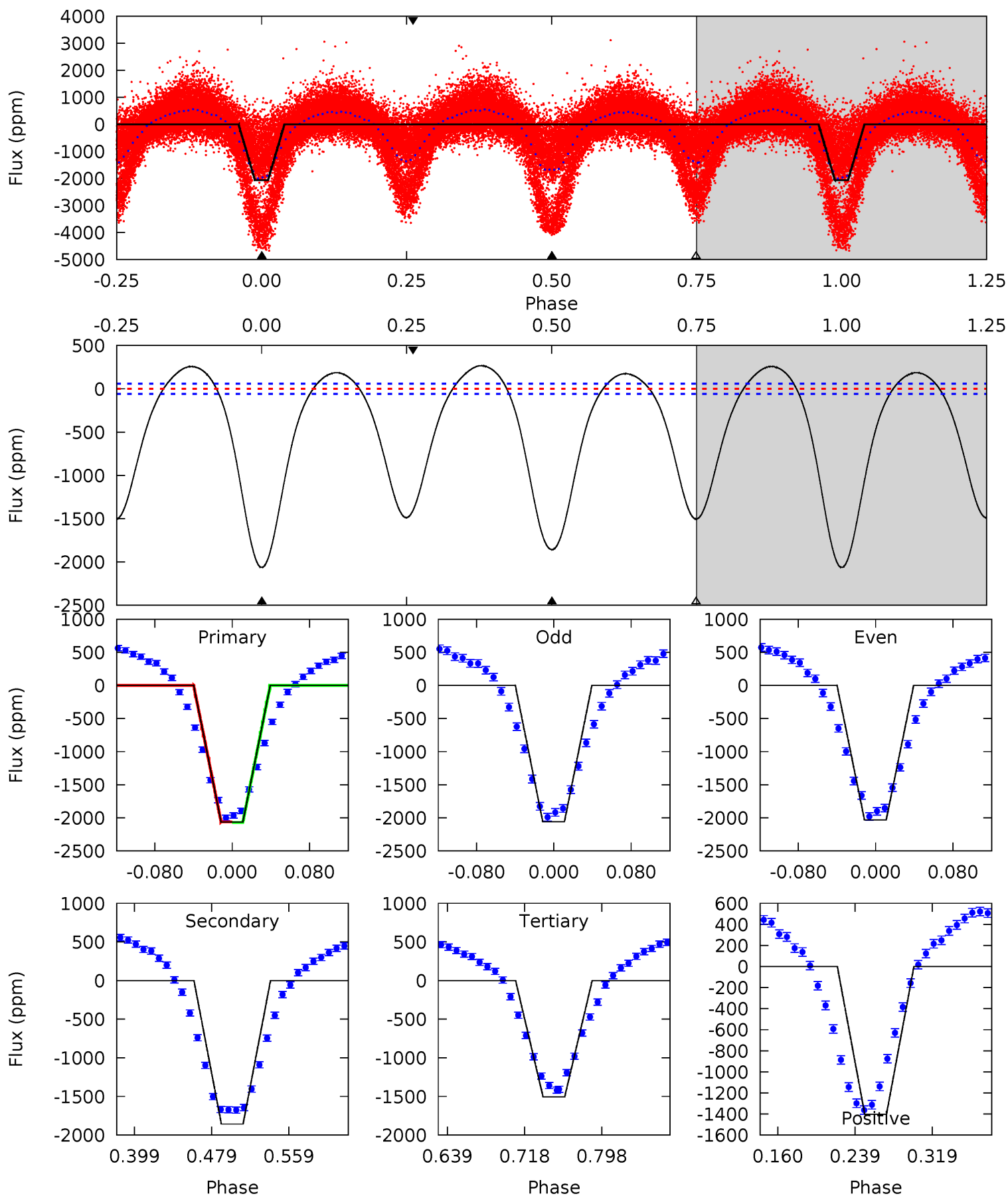
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
57.4	43.1	11.2	0.33	4.63	1.79	4.26	46.3	57.1	32.0	42.8	2.74	1.48	0.12	6.05



Alt Model-Shift Uniqueness Test

011151677-01, P = 0.720457 Days, E = 130.935855 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
161.2	145.1	117.5	-109.6	4.61	1.75	44.4	43.8	270.9	27.6	254.7	1.03	1.36	0.11	0.31



Stellar Parameters For KIC 011151677

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6304^{+175}_{-219}	$4.435^{+0.056}_{-0.224}$	$-0.140^{+0.250}_{-0.300}$	$1.058^{+0.364}_{-0.121}$	$1.110^{+0.154}_{-0.154}$	$1.319^{+0.405}_{-0.731}$
	+3%/-3%	+1%/-5%	+179%/-214%	+34%/-11%	+14%/-14%	+31%/-55%
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 011151677-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-265 ± 6	$2.20^{+0.65}_{-0.49}$	3194^{+253}_{-164}	5884^{+806}_{-591}	$7.849^{+4.965}_{-3.063}$
Alt.	-1857 ± 13	$4.36^{+0.89}_{-0.63}$	3198^{+245}_{-171}	6848^{+534}_{-408}	14^{+5}_{-4}

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 $A_{obs} \gg 1.0$

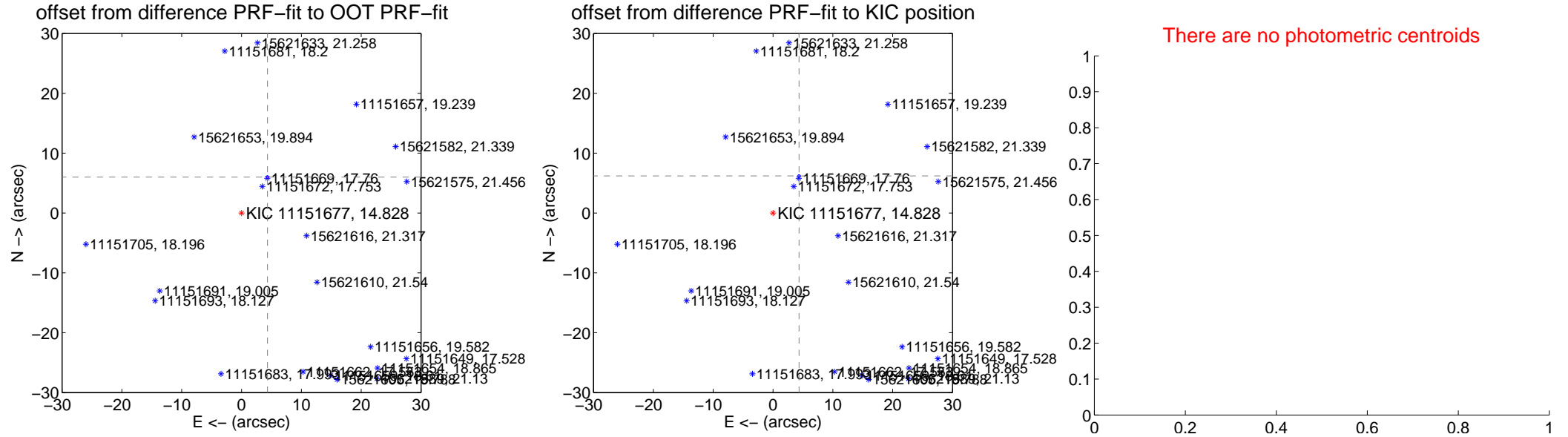
DV Centroid Data

Supplemental centroid analysis for 011151677-01. Kepler magnitude: 14.83. Transit SNR 26.60

There are 14 quarters with good PRF difference image offsets

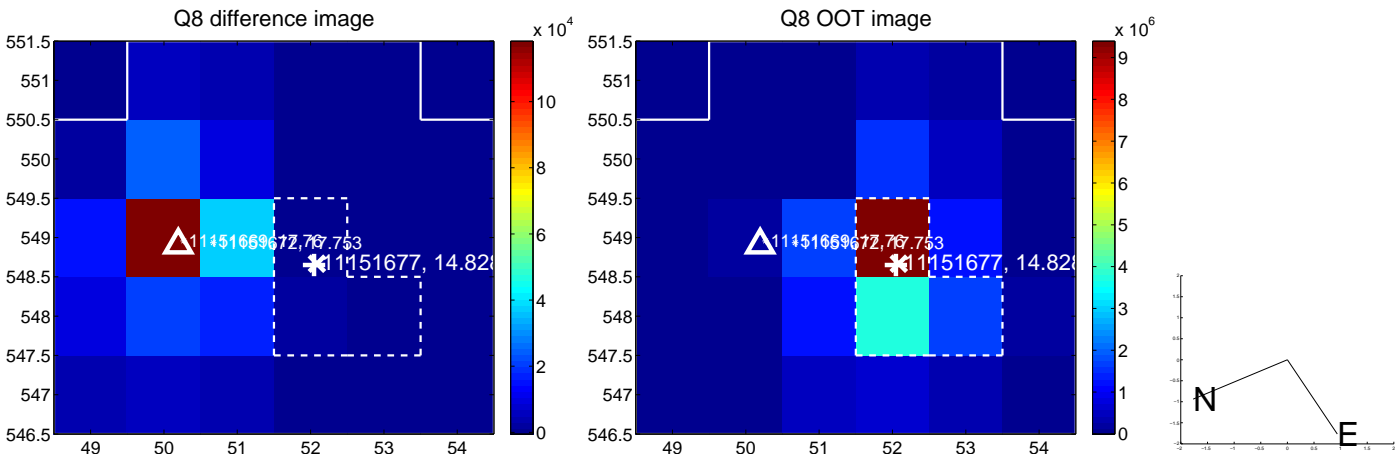
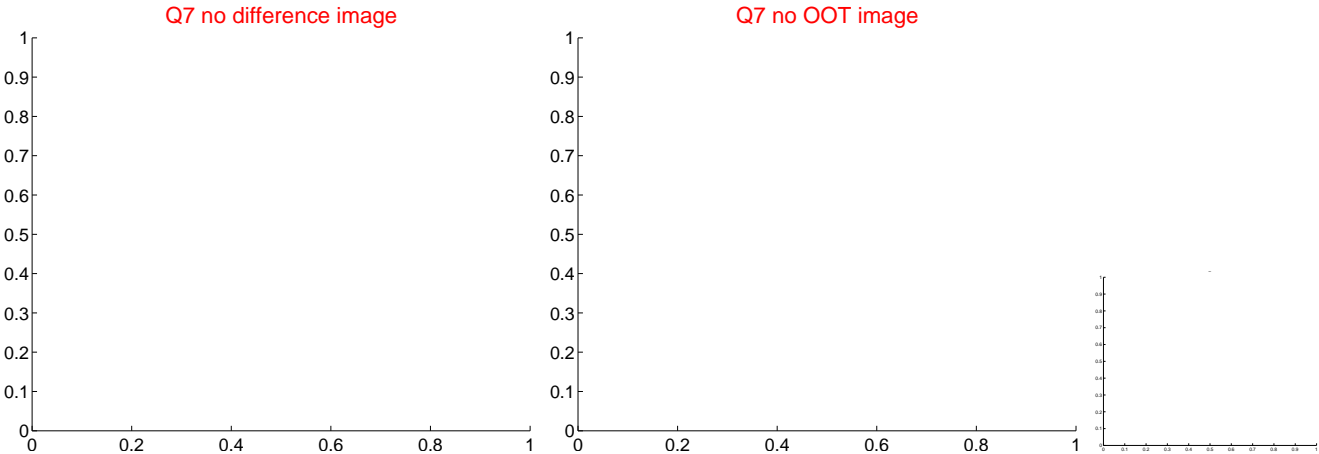
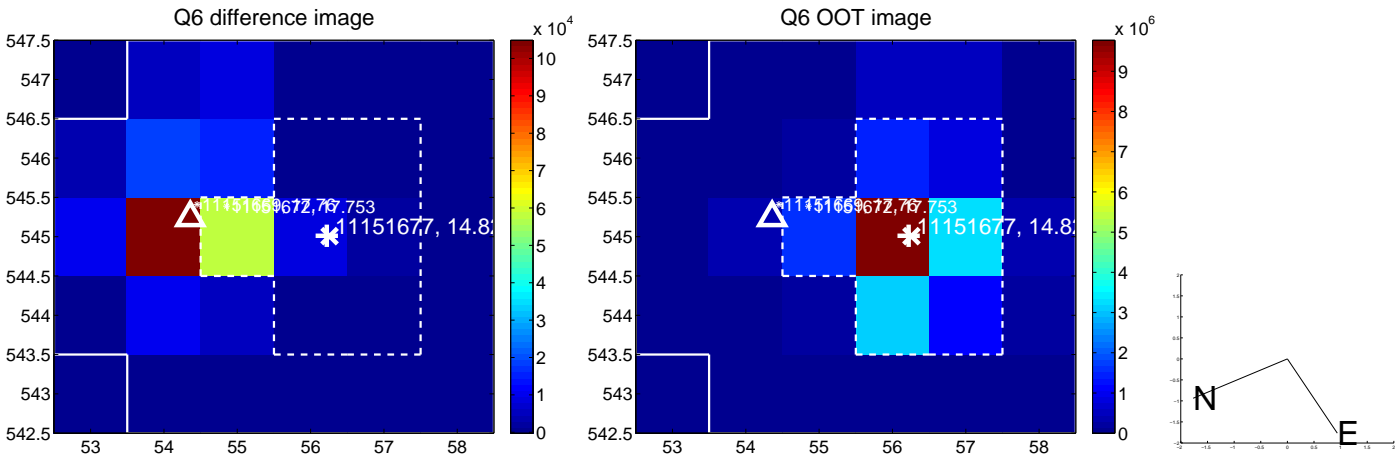
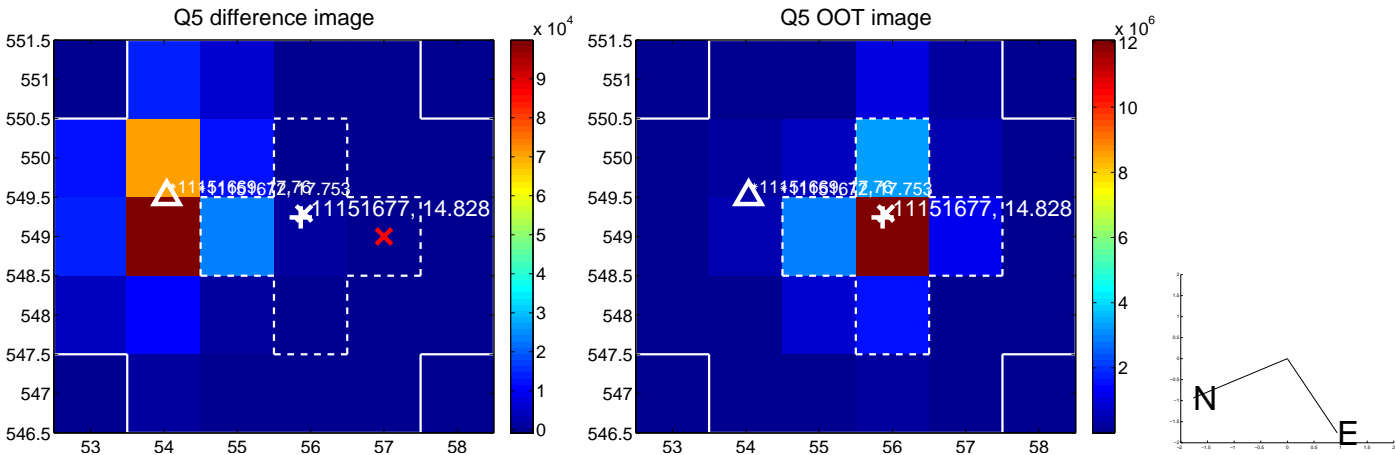
The direct PRF centroid is offset from the target star catalog position by about 0.26 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	7.404 ± 0.071	103.69	-4.332 ± 0.068	6.004 ± 0.073
PRF-fit source offset from KIC position	7.571 ± 0.069	109.10	-4.353 ± 0.068	6.195 ± 0.070
photometric centroid source offset	—	—	—	—

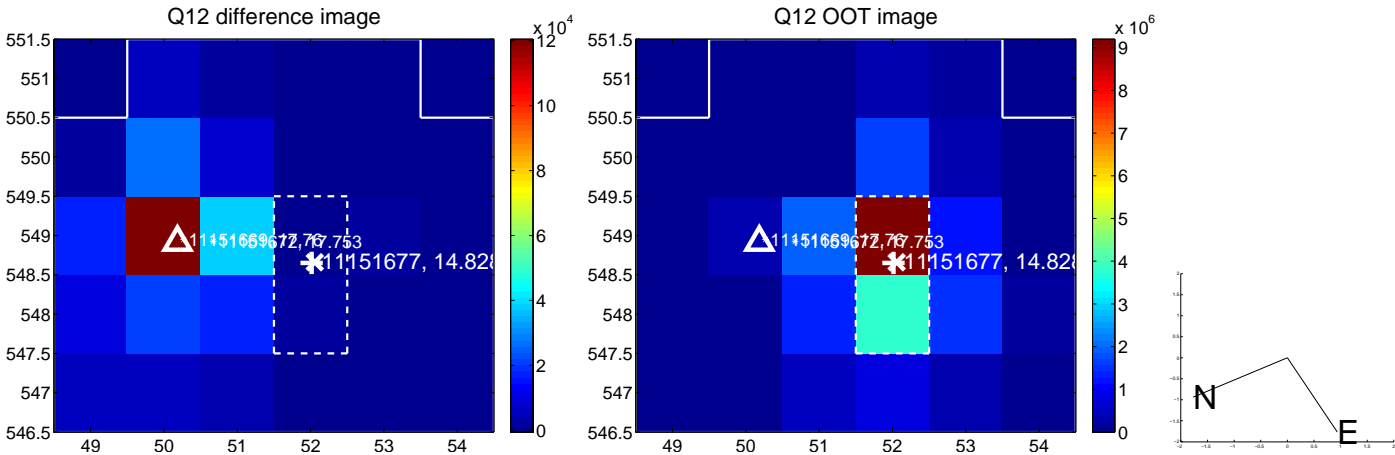
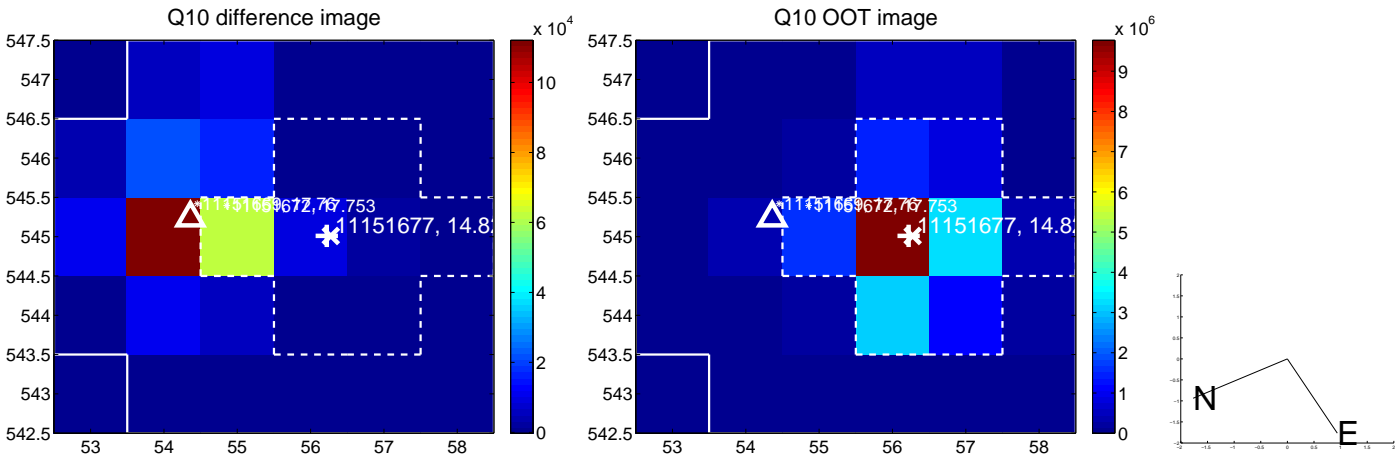
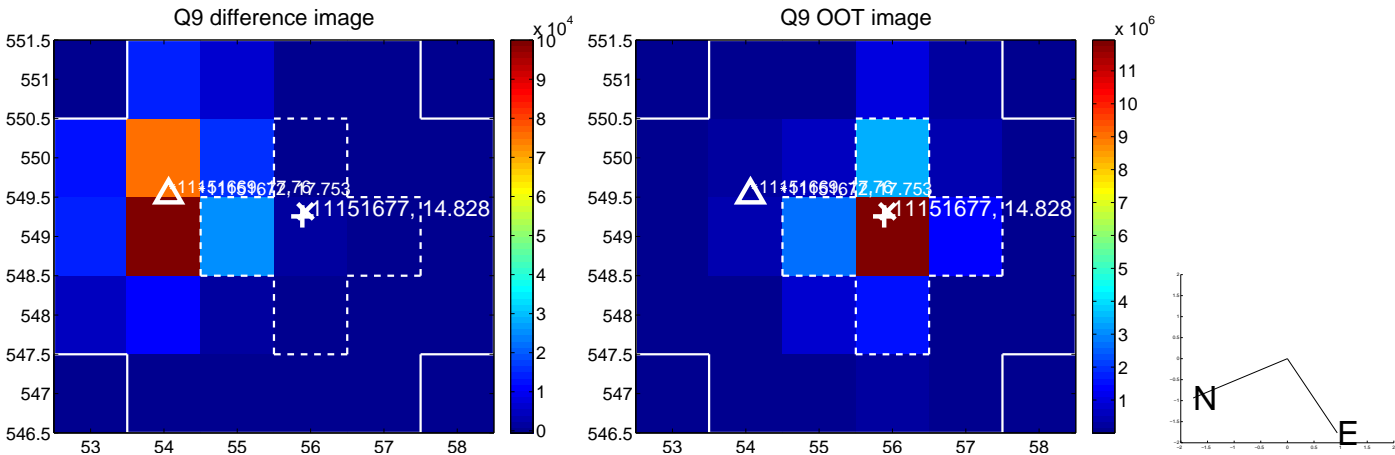


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

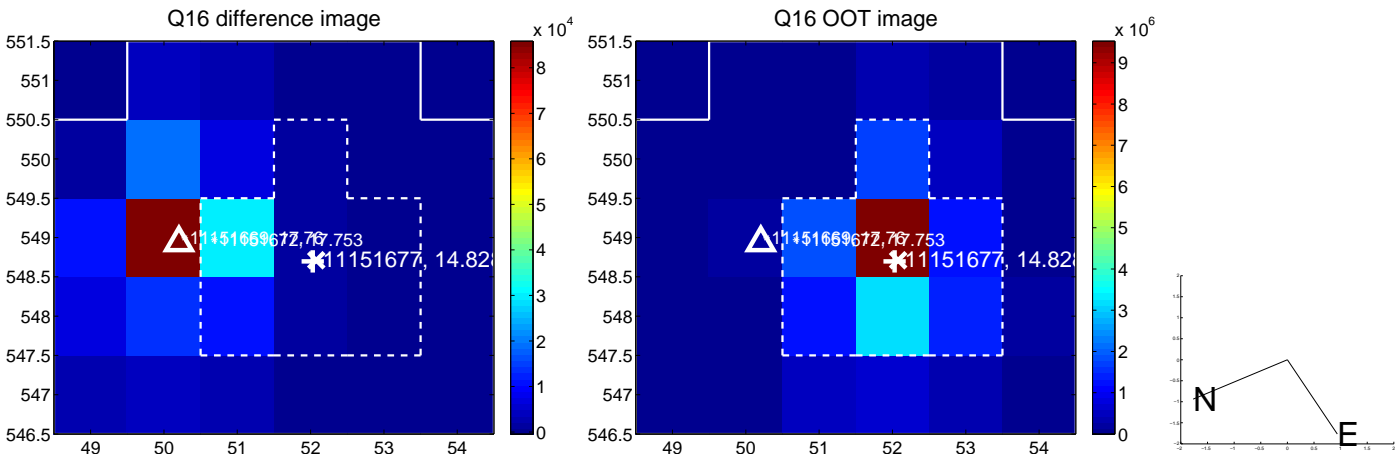
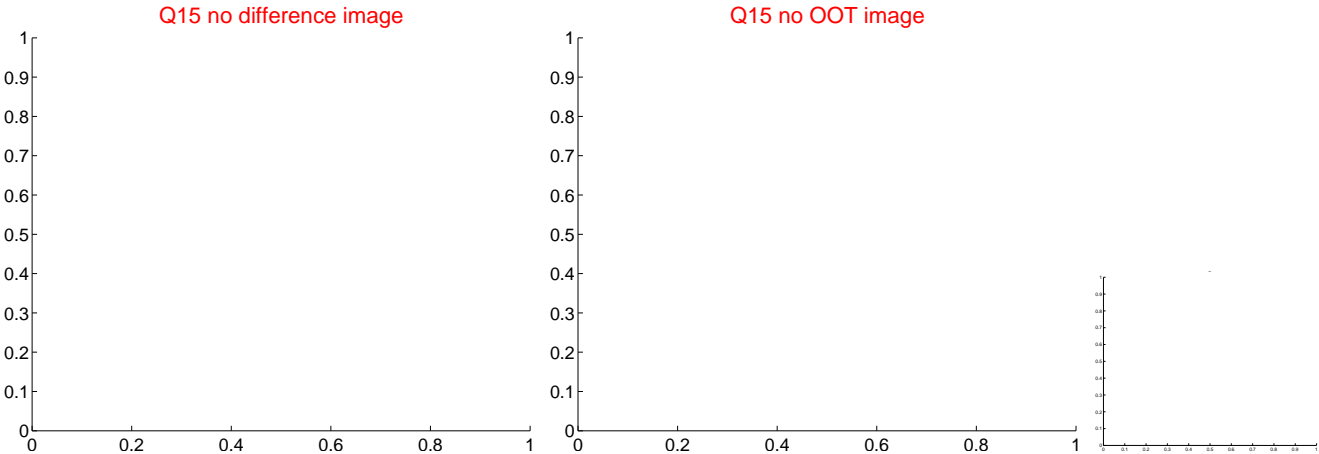
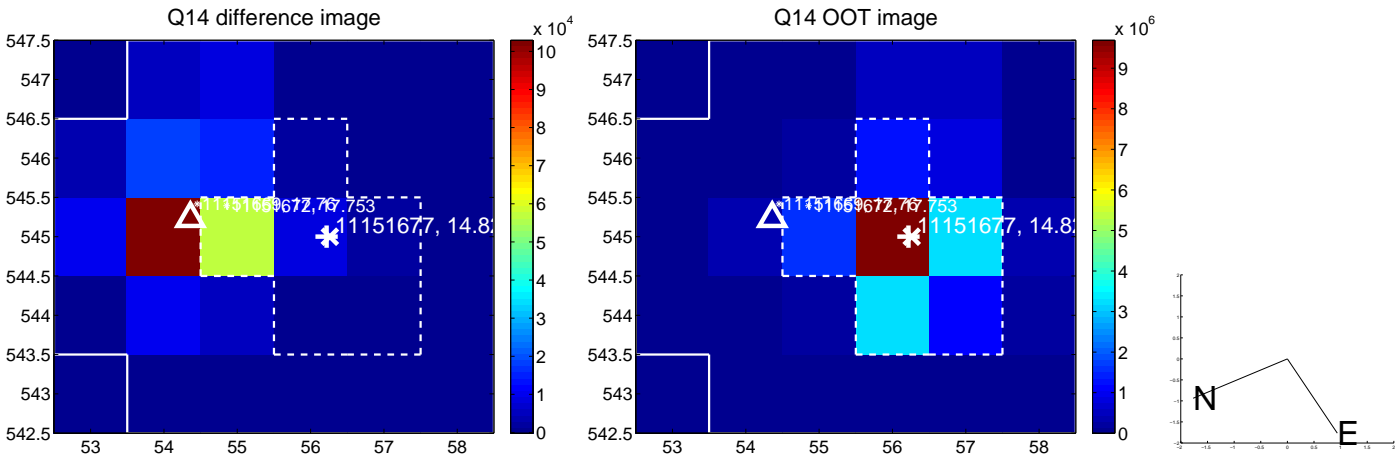
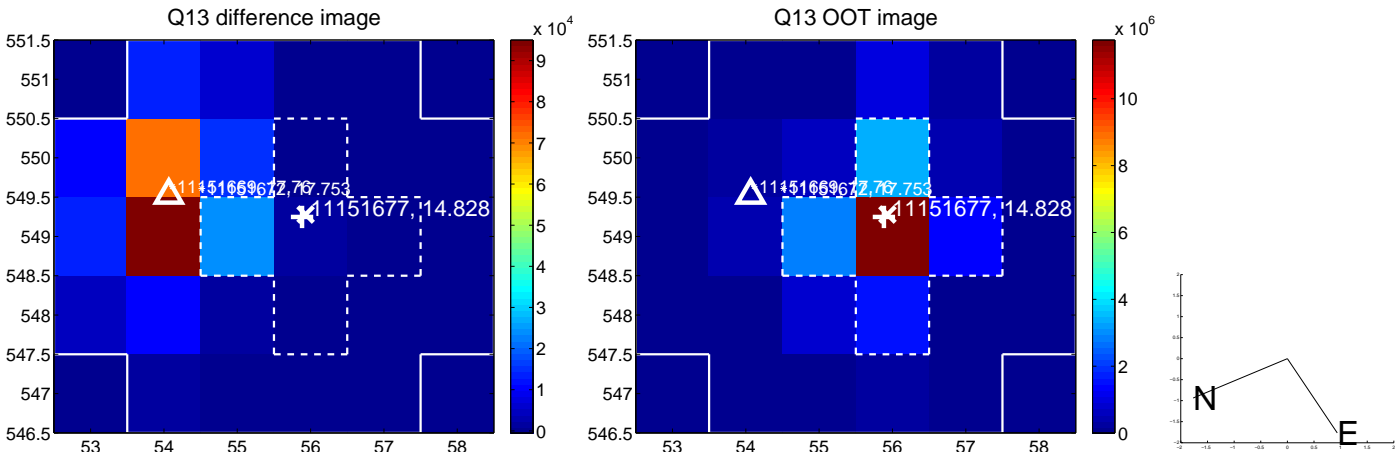
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



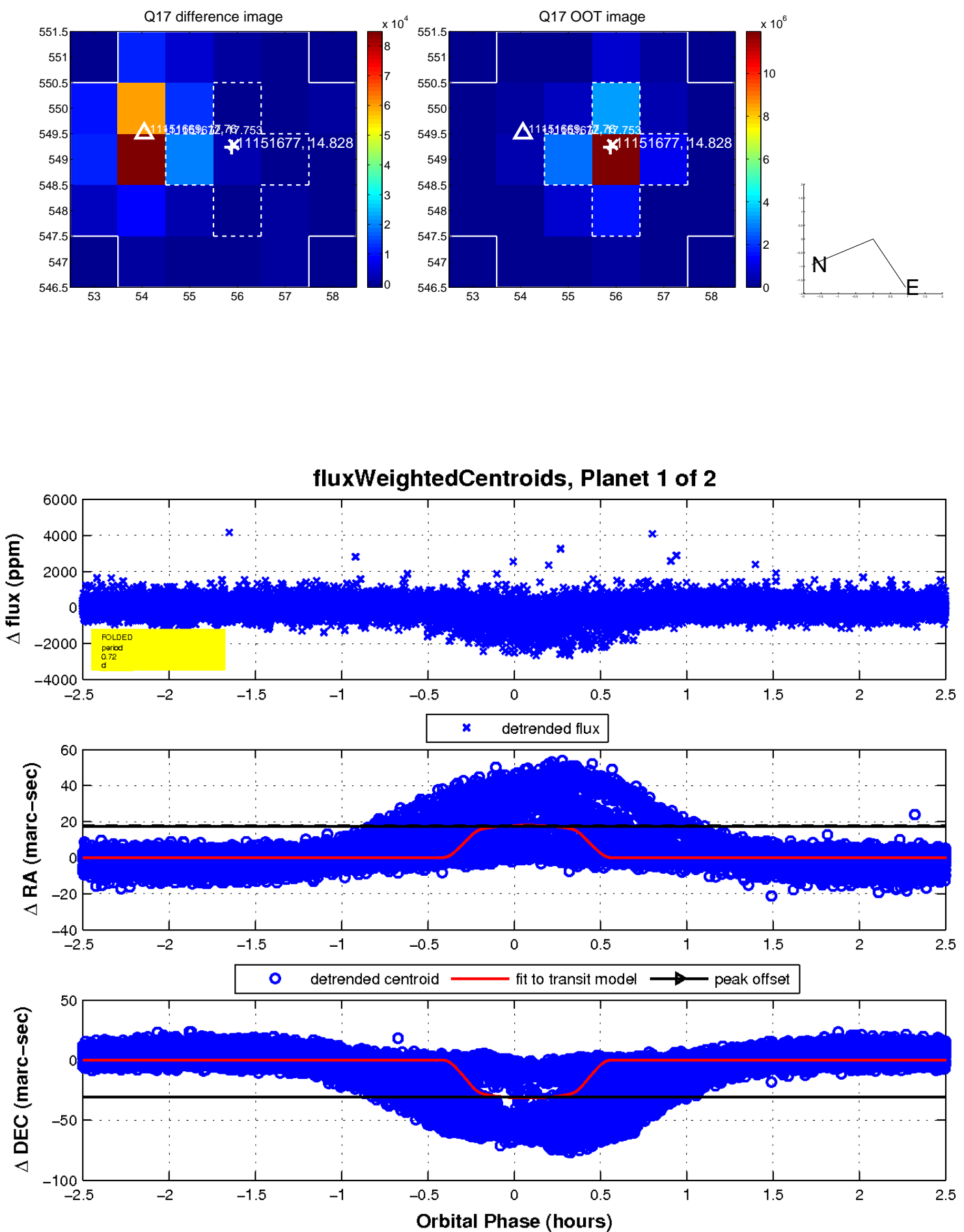
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

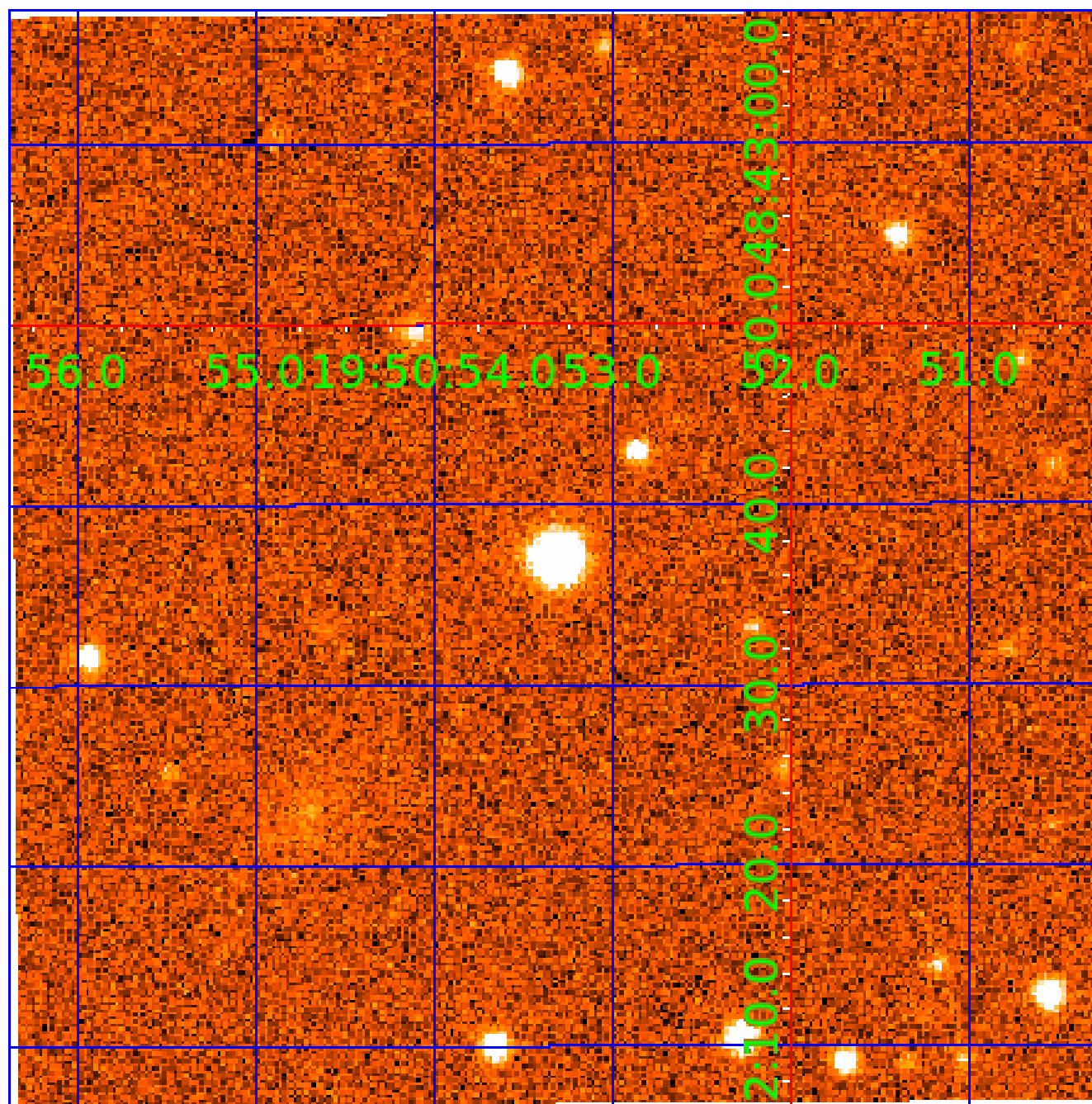


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 011151677

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})
011151677-01	OBS	No	0.720446	131.664668	275.5	0.833	22.3	26.6	1.06	6304	2.11	5964.14
011151677-02	OBS	4308.01	0.720445	132.024360	281.8	0.906	30.7	29.2	1.06	6304	2.13	5964.14

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011151677-01	OBS	FP	0.00	1	0	1	0	LPP_ALT—MOD_NONUNIQ_ALT—CENT_RESOLVED_OFFSET
011151677-02	OBS	FP	0.00	1	0	1	0	LPP_ALT—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_RESOLVED_OFFSET

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.

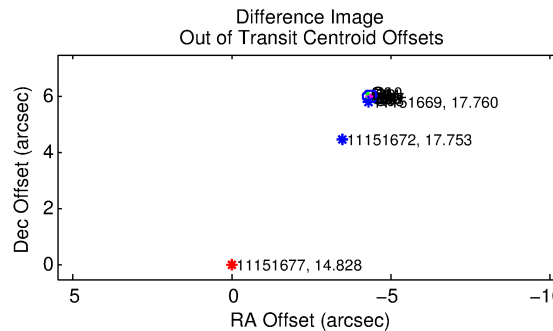
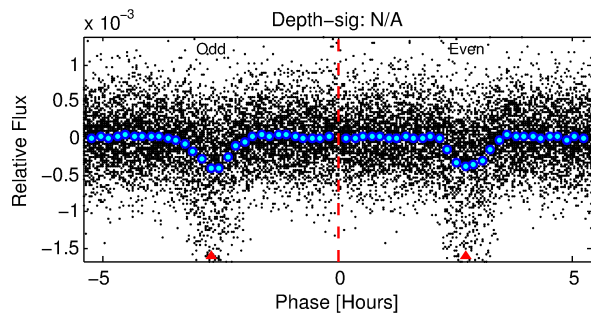
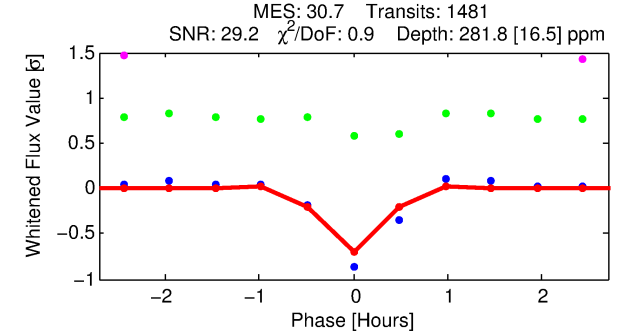
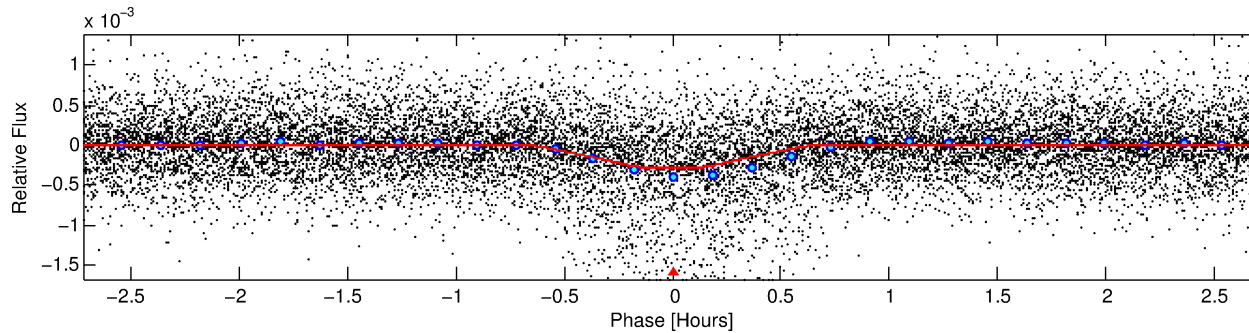
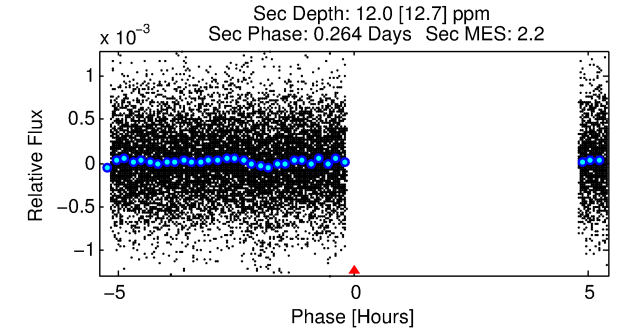
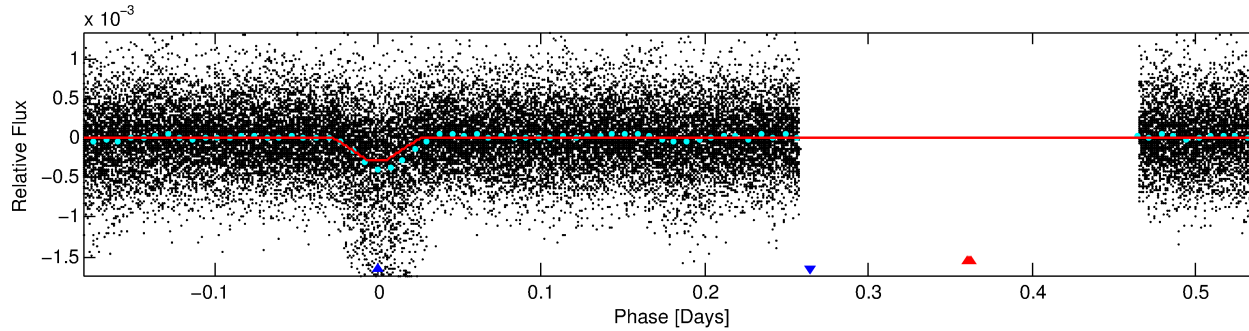
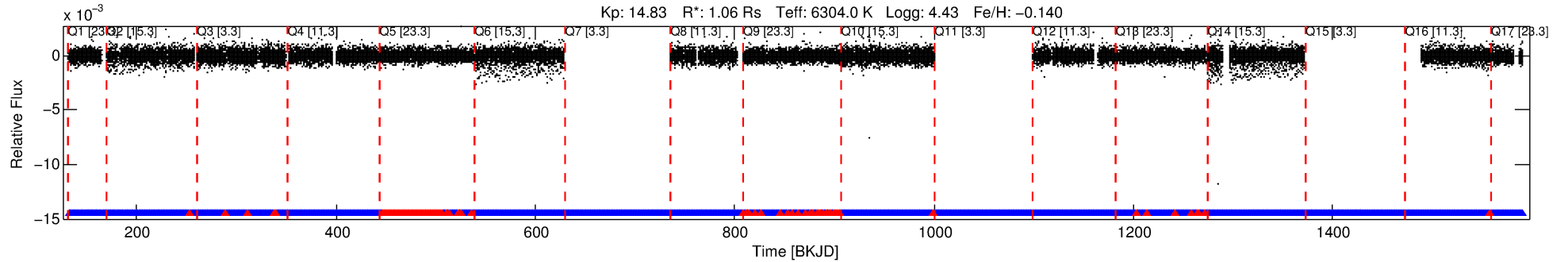
Ephemeris Match Information For 011151677-02

No Significant Match Found

DV One-Page Summary

KIC: 11151677 Candidate: 2 of 2 Period: 0.720 d
KOI: K04308 Corr: No Ephemeris Match

Kp: 14.83 R*: 1.06 Rs Teff: 6304.0 K Logg: 4.43 Fe/H: -0.140



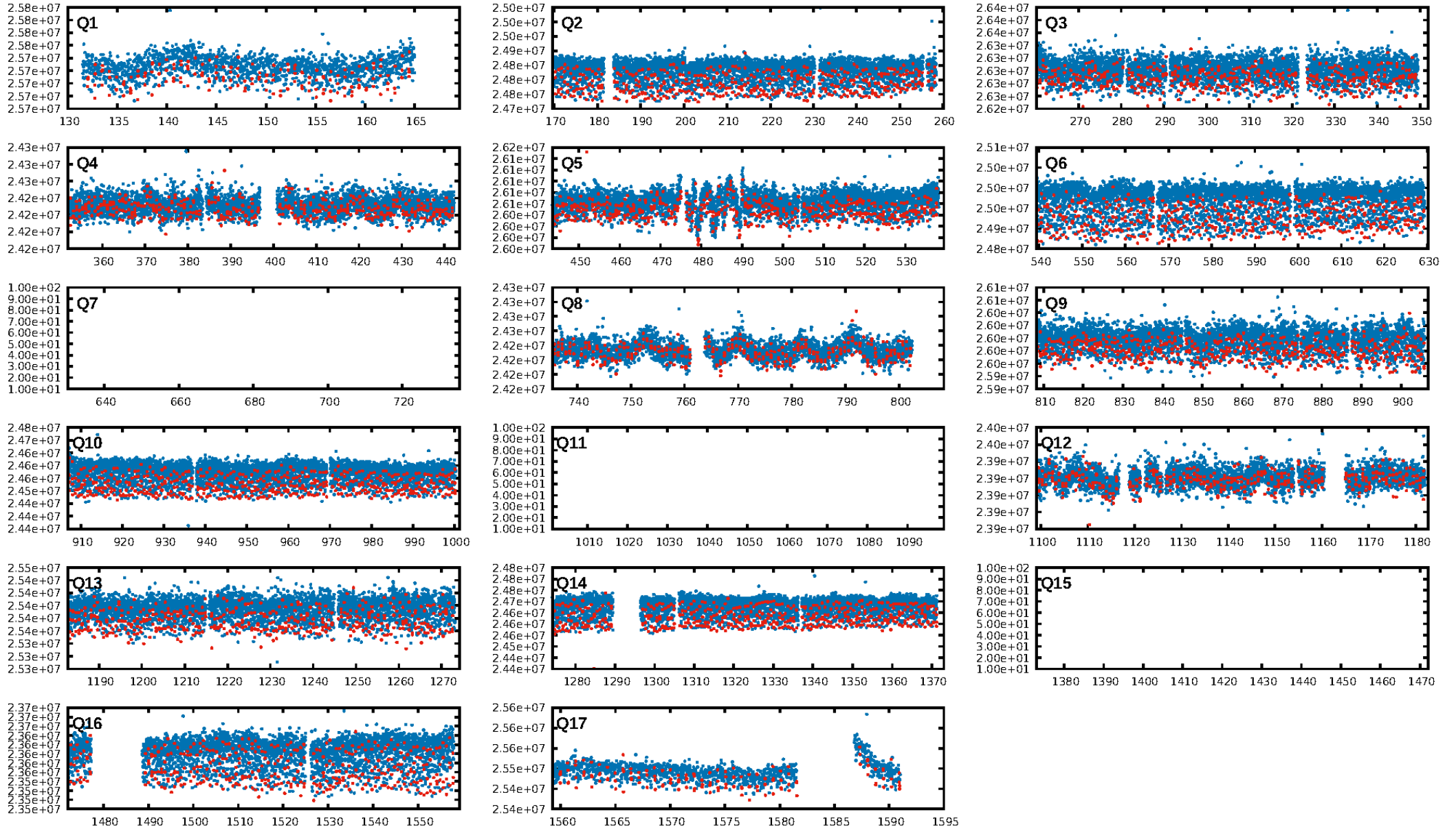
DV Fit Results:

Period = 0.72045 [0.00000] d
Epoch = 132.0244 [0.0005] BKJD
Rp/R* = 0.0185 [0.0034]
a/R* = 2.89 [2.50]
b = 0.91 [0.18]
Seff = 5964.14 [2600.75]
Teq = 2241 [244] K
Rp = 2.13 [0.83] Re
a = 0.0163 [0.0047] AU
Ag = 0.39 [0.46] [-1.33σ]
Teff = 2730 [771] K [0.60σ]

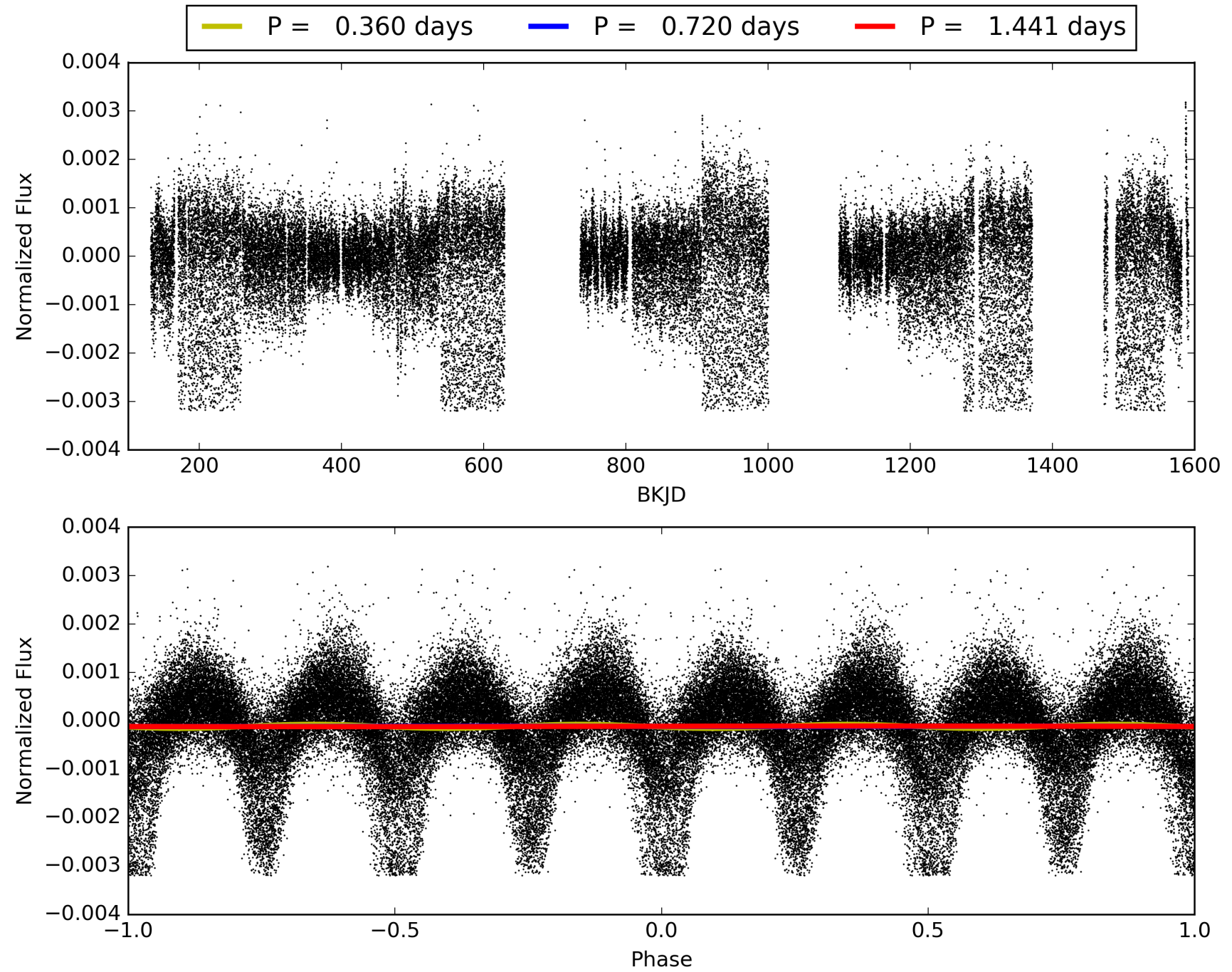
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.92 [1281/1397]
GhostDiagnostic-chr: -0.3342
Centroid-sig: 0.0%
Centroid-so: 115.318 arcsec [167.38σ]
OotOffset-rm: 7.399 arcsec [103.35σ]
KicOffset-rm: 7.568 arcsec [108.69σ]
OotOffset-st: 4/1/4/5 [14]
KicOffset-st: 4/1/4/5 [14]
DiffImageQuality-fgm: 1.00 [14/14]
DiffImageOverlap-fno: 1.00 [14/14]

TCE 011151677-02, PDC Light Curves

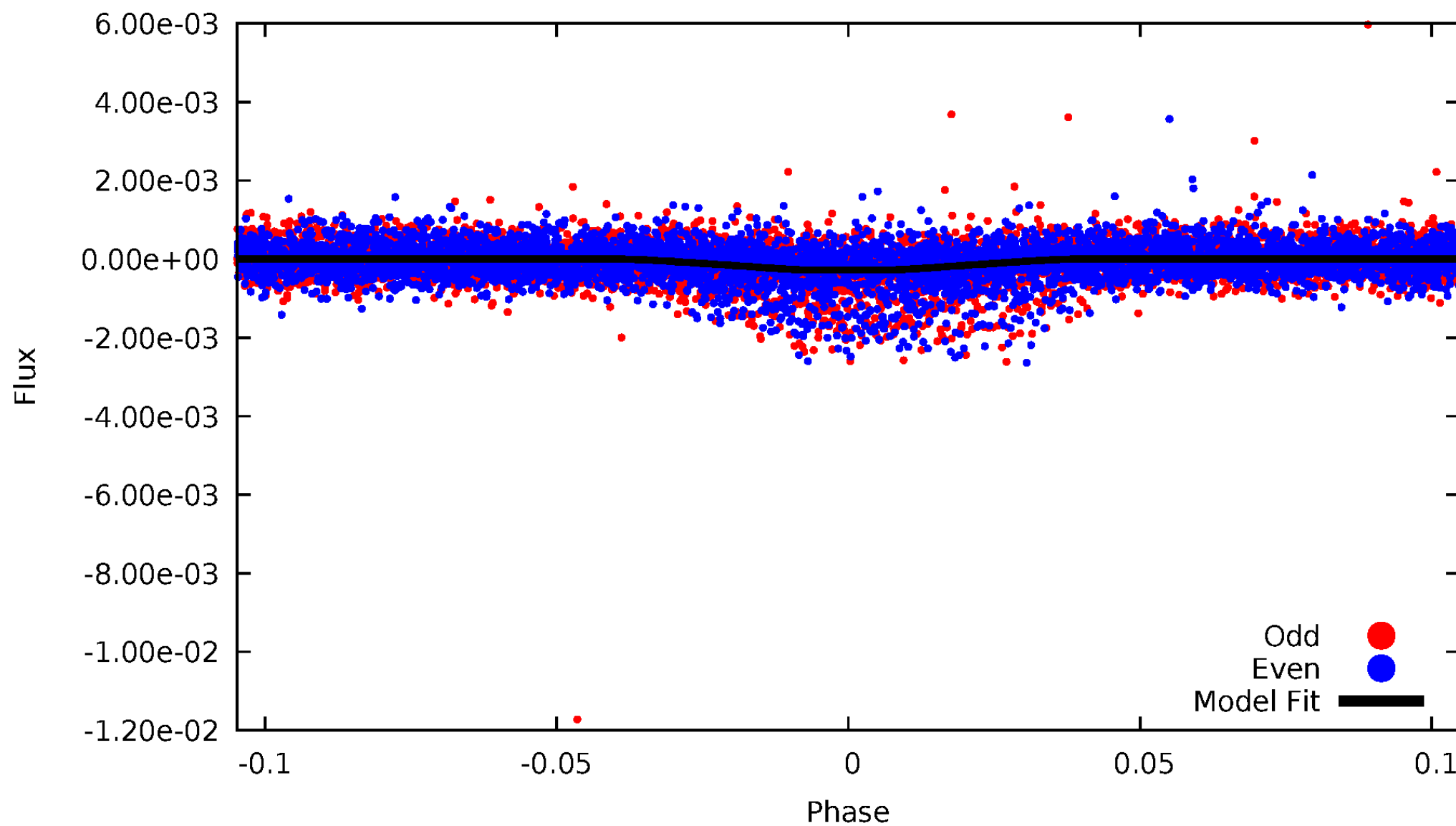


TCE 011151677-02



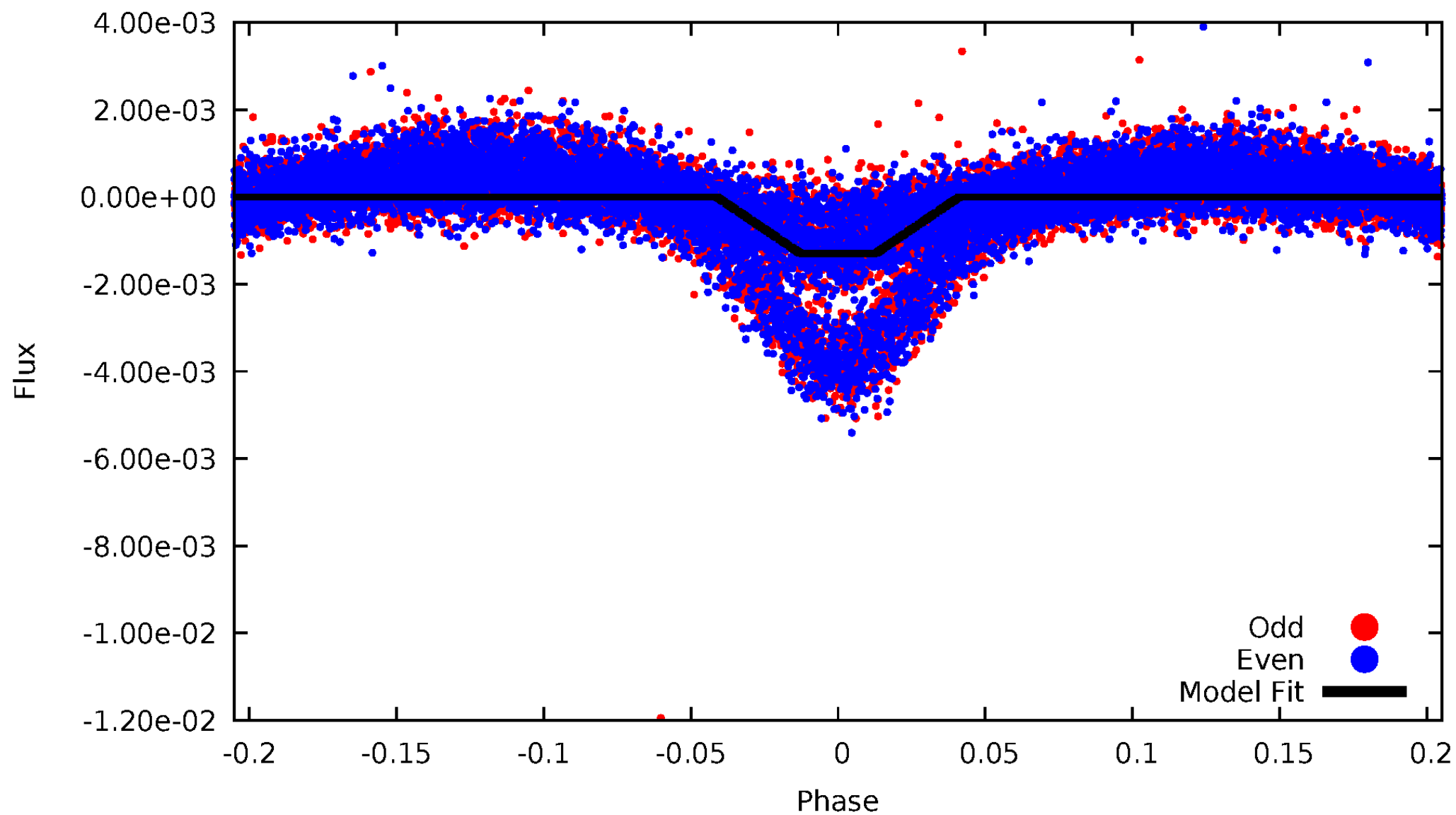
DV Odd/Even

TCE 011151677-02



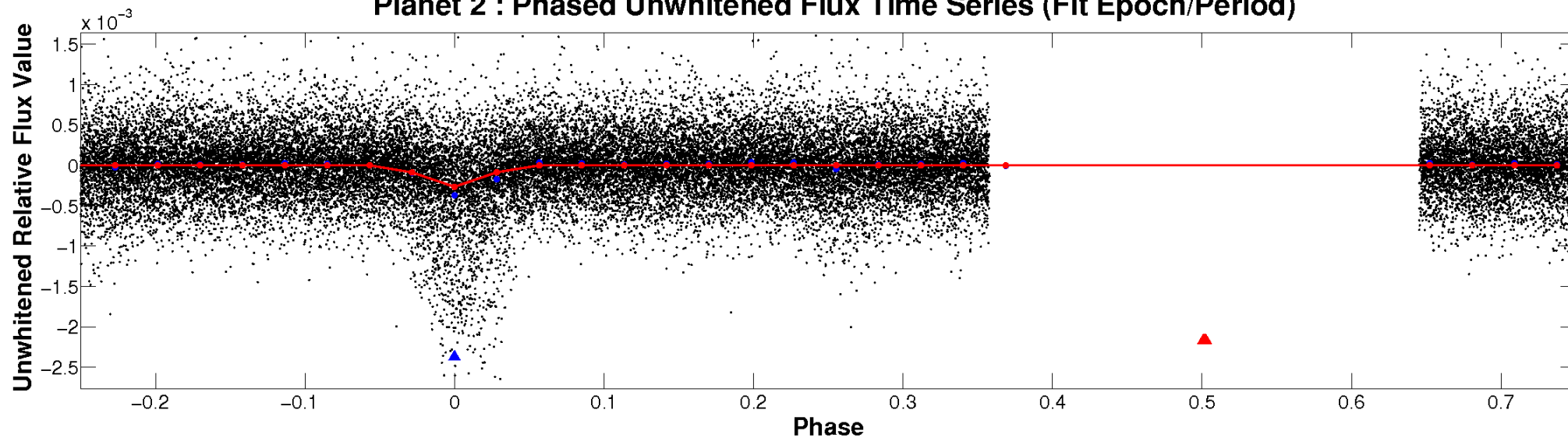
ALT Odd/Even

TCE 011151677-02

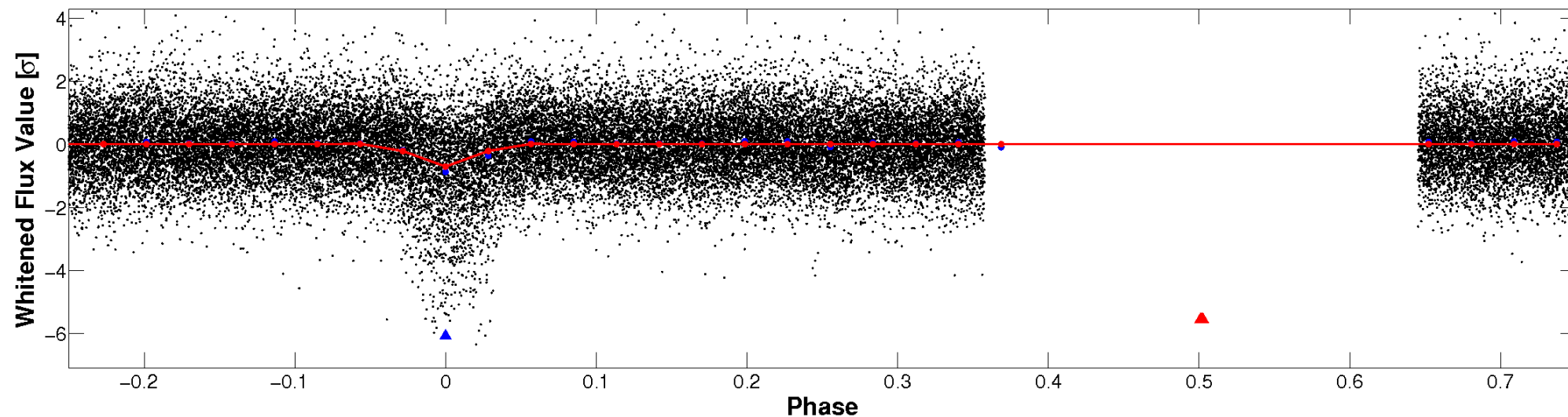


Non-Whitened Vs. Whitened Light Curve

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

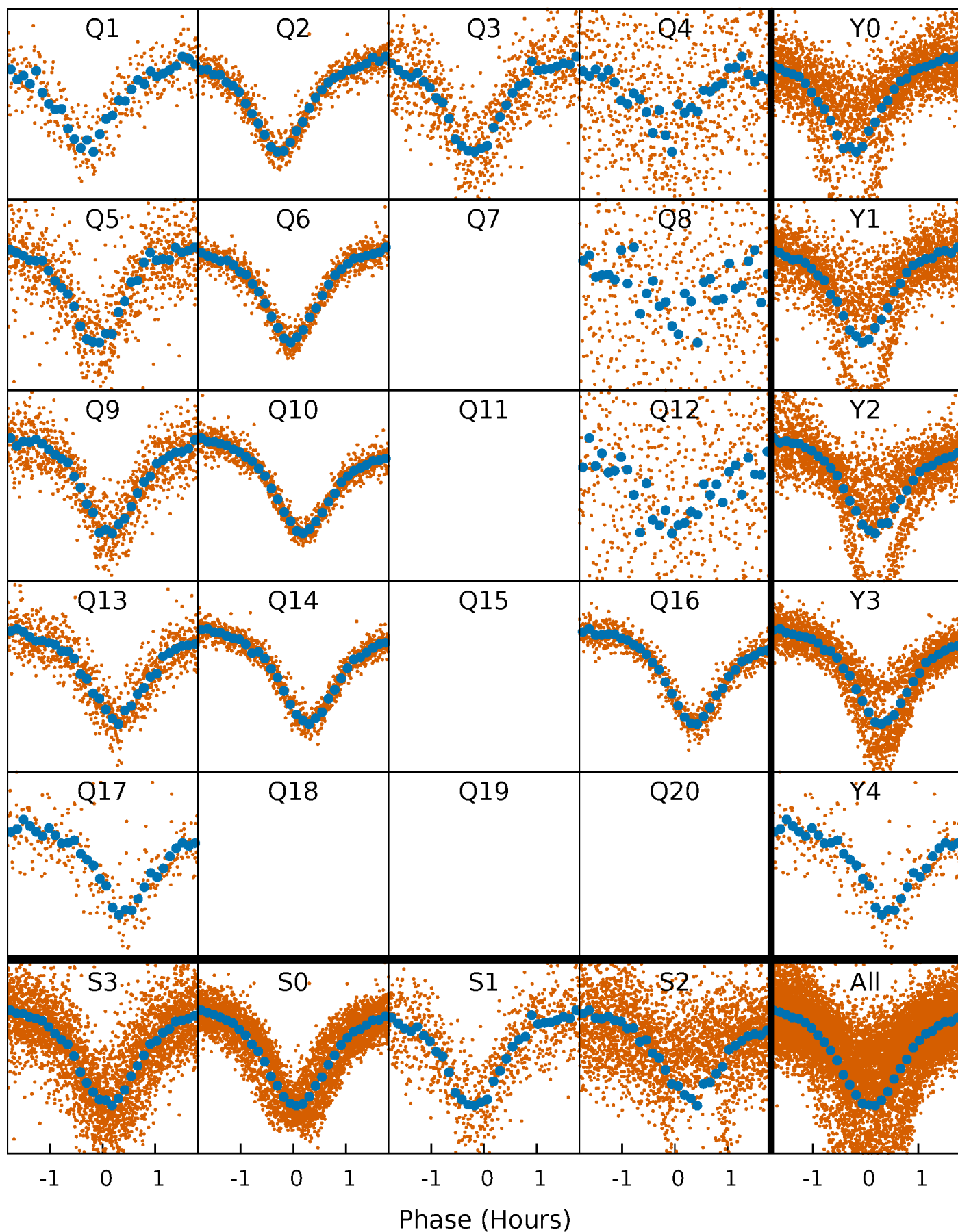


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



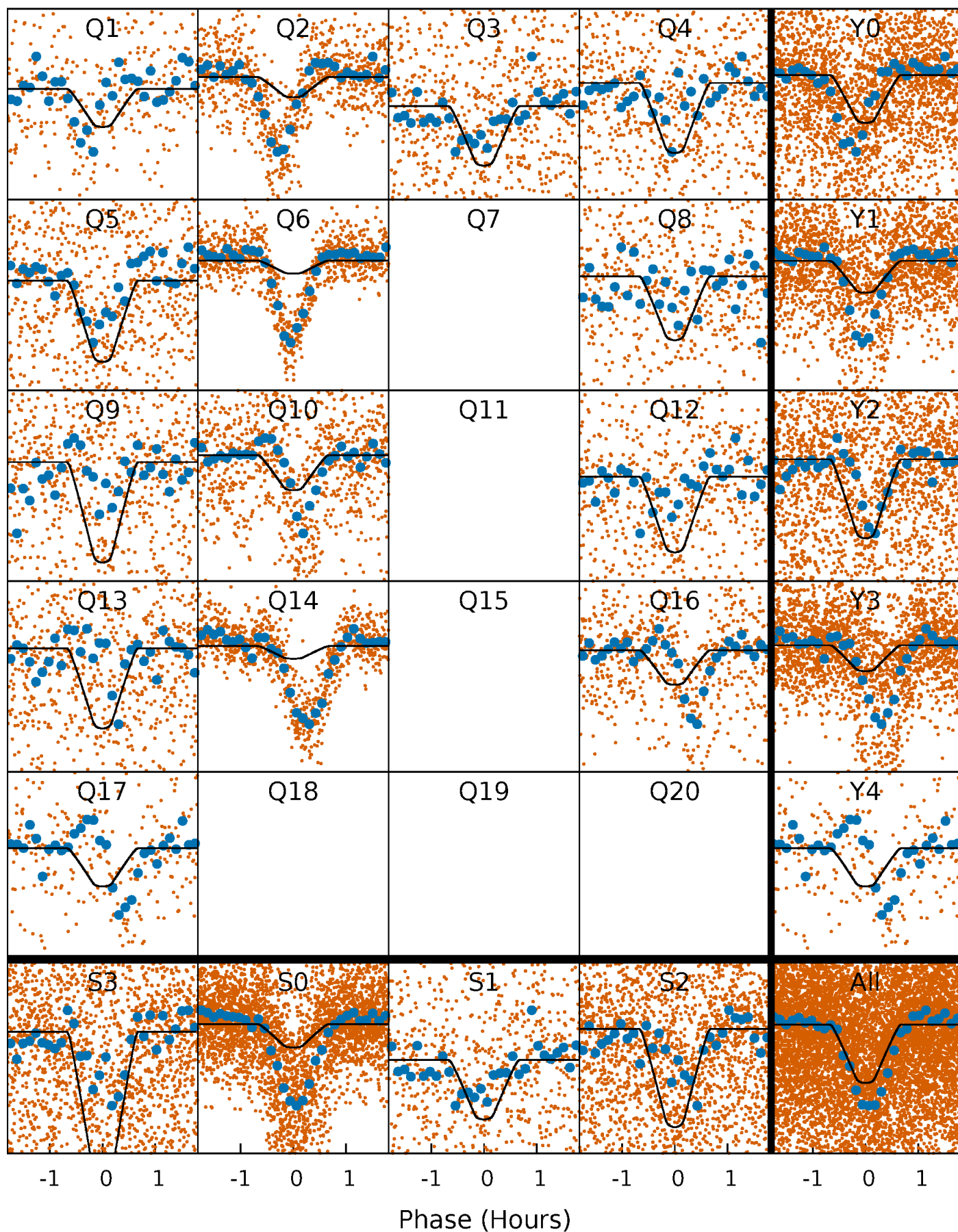
PDC Quarter-Phased Transit Curves

TCE 011151677-02 P= 0.720445 Days $T_0=132.024360$ (BKJD)



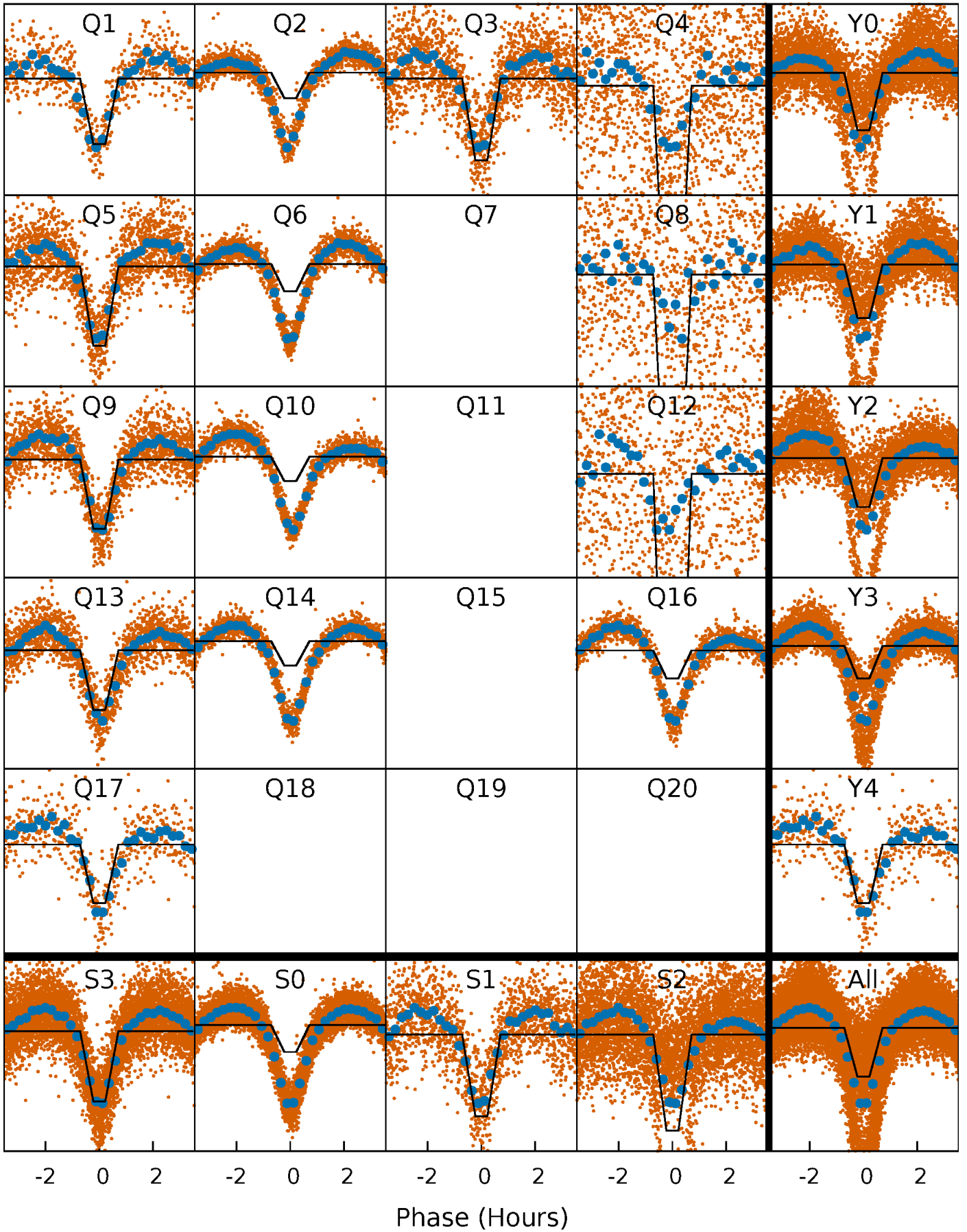
DV Quarter-Phased Transit Curves

TCE 011151677-02 P= 0.720445 Days $T_0=132.024360$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

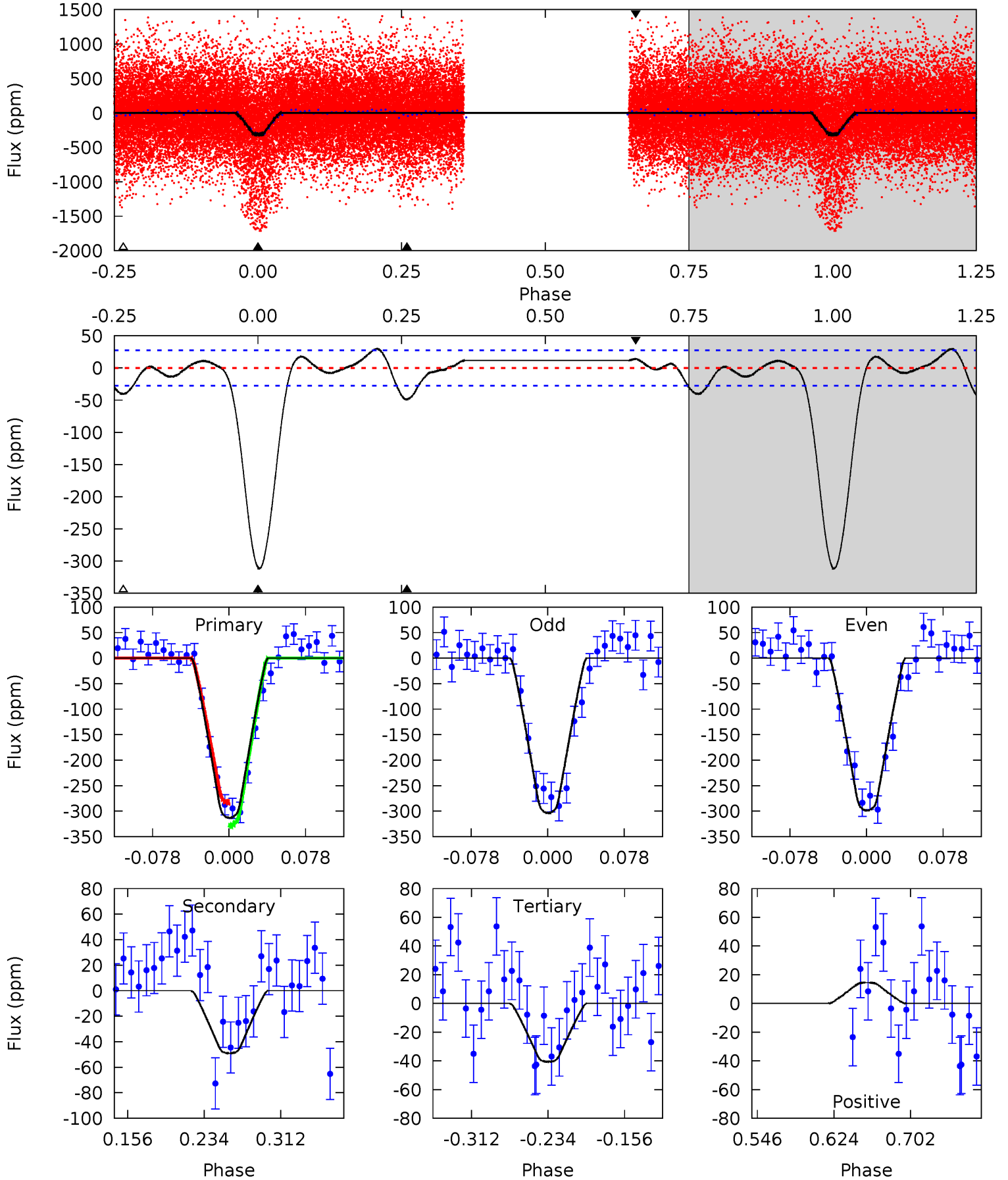
TCE 011151677-02 P= 0.720457 Days $T_0=132.016104$ (BKJD)



DV Model-Shift Uniqueness Test

011151677-02, P = 0.720445 Days, E = 131.303915 Days

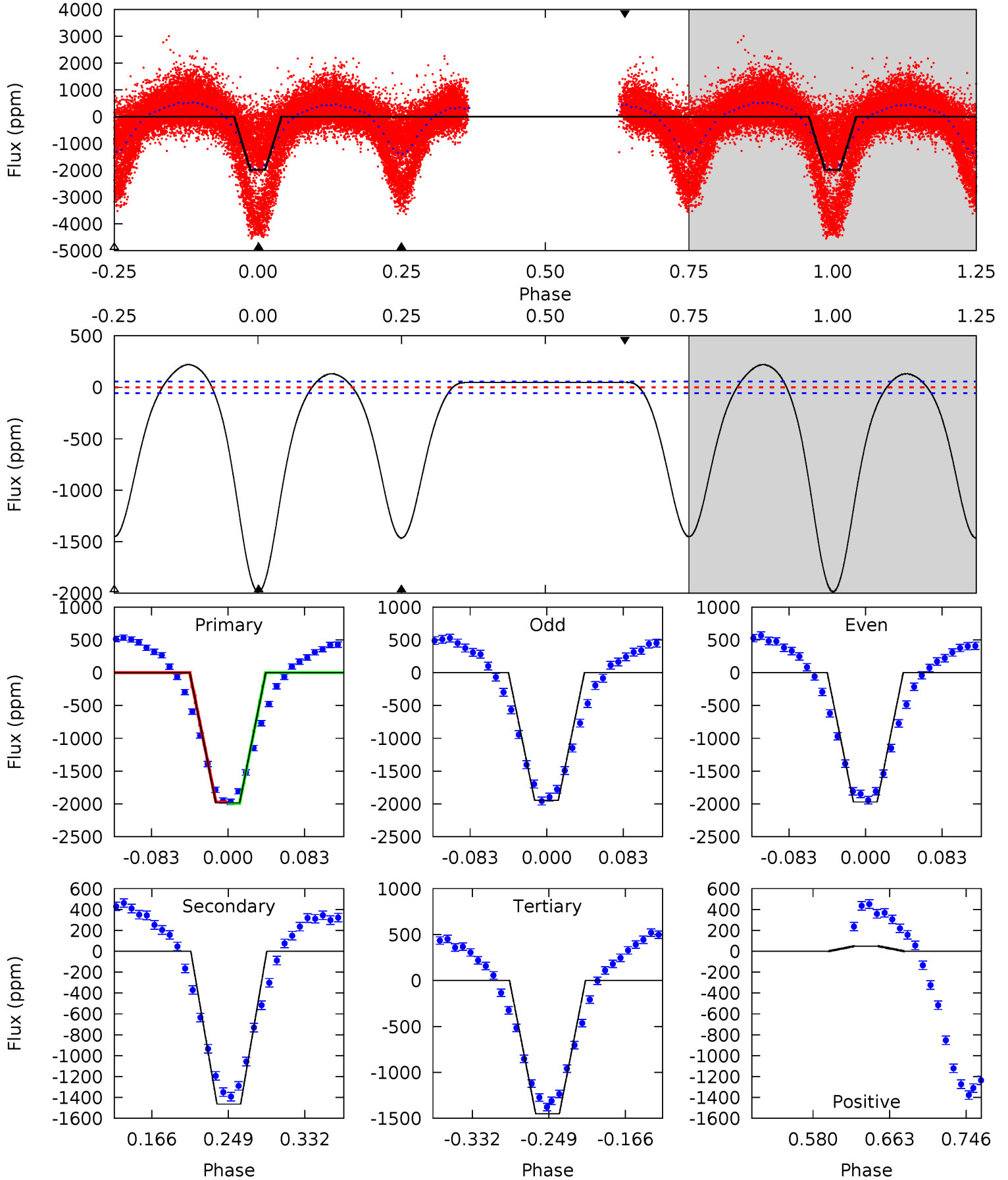
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
52.6	8.23	6.82	2.44	4.62	1.76	2.23	45.7	50.1	1.41	5.79	0.43	1.53	0.09	3.81



Alt Model-Shift Uniqueness Test

011151677-02, P = 0.720457 Days, E = 131.295647 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
162.6	119.9	118.8	4.00	4.60	1.73	42.8	43.8	158.6	1.10	115.9	1.00	1.36	0.10	0.85



Stellar Parameters For KIC 011151677

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6304^{+175}_{-219}	$4.435^{+0.056}_{-0.224}$	$-0.140^{+0.250}_{-0.300}$	$1.058^{+0.364}_{-0.121}$	$1.110^{+0.154}_{-0.154}$	$1.319^{+0.405}_{-0.731}$
	+3%/-3%	+1%/-5%	+179%/-214%	+34%/-11%	+14%/-14%	+31%/-55%
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 011151677-02 / KOI 4308.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-49 ± 6	$2.21^{+0.57}_{-0.46}$	3184^{+245}_{-145}	3970^{+410}_{-329}	$1.430^{+0.839}_{-0.500}$
Alt.	-1464 ± 12	$4.30^{+0.85}_{-0.57}$	3184^{+261}_{-157}	6446^{+391}_{-362}	11^{+3}_{-3}

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 $A_{obs} \gg 1.0$

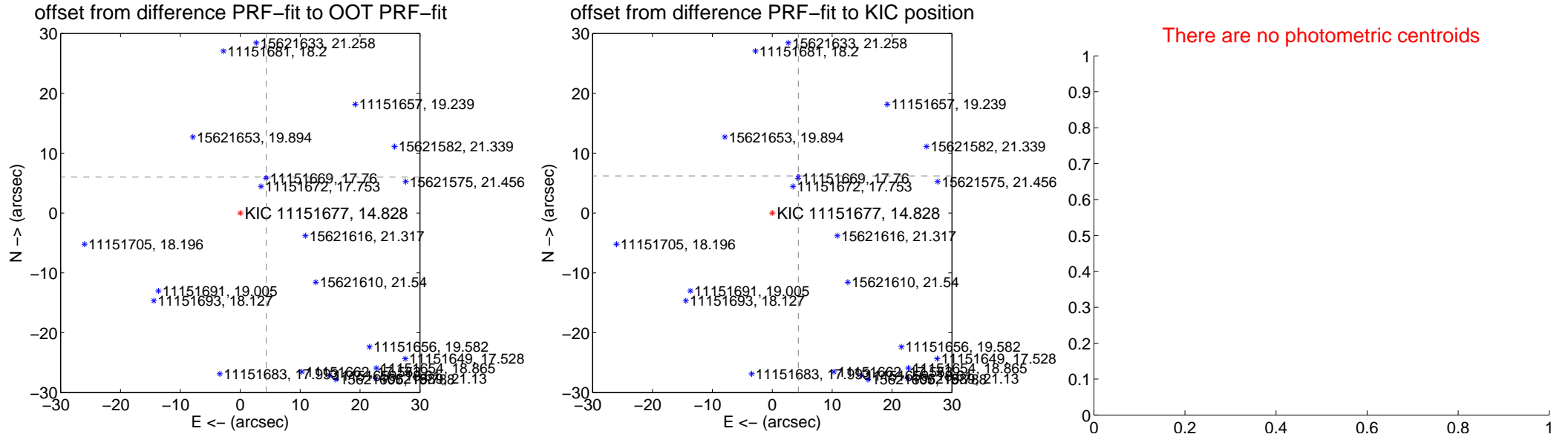
DV Centroid Data

Supplemental centroid analysis for 011151677-02. Kepler magnitude: 14.83. Transit SNR 29.20

There are 14 quarters with good PRF difference image offsets

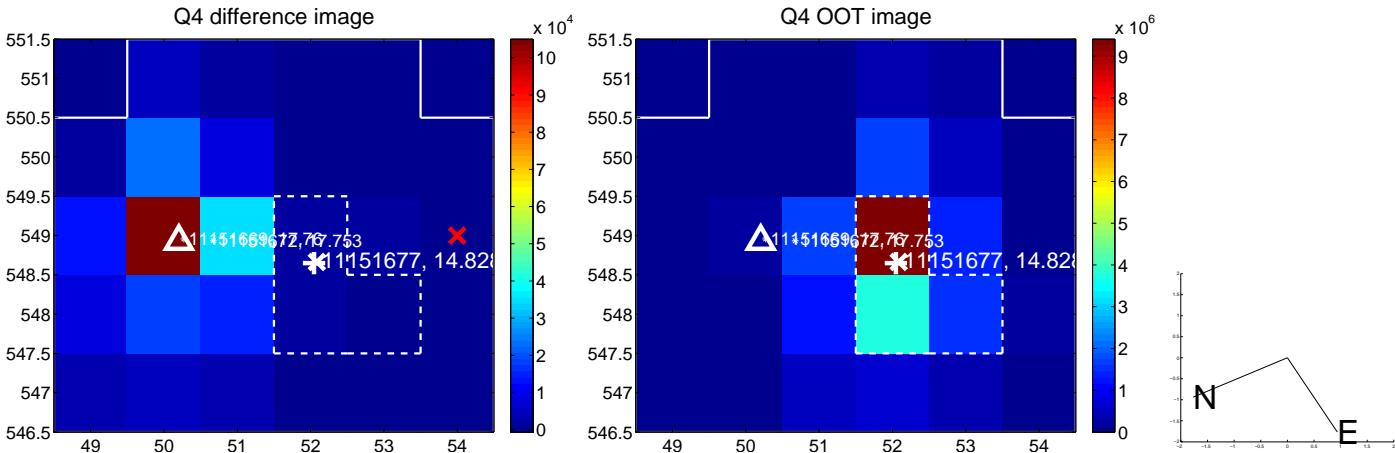
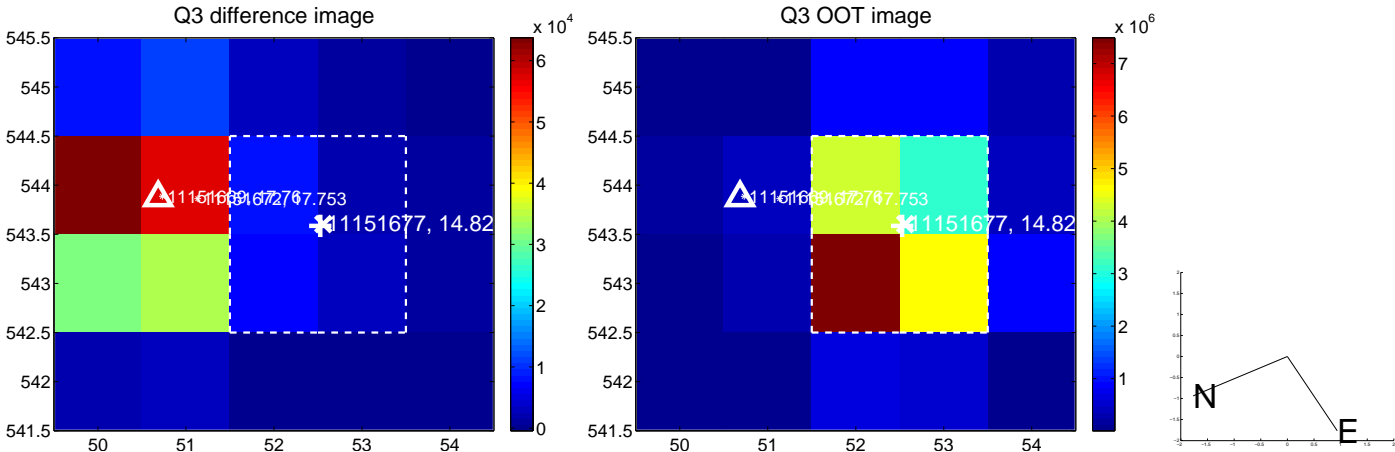
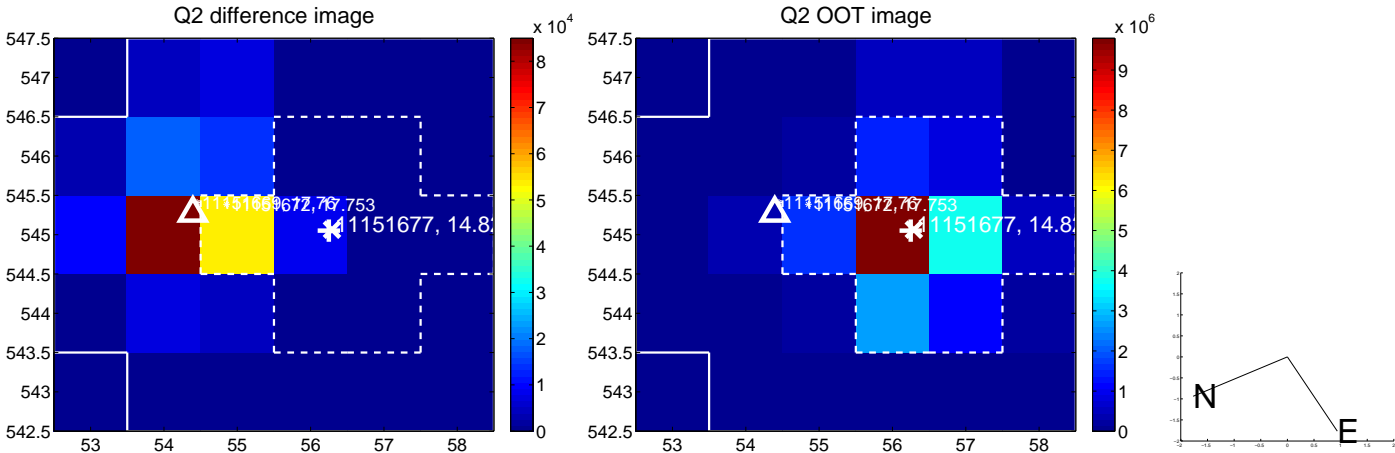
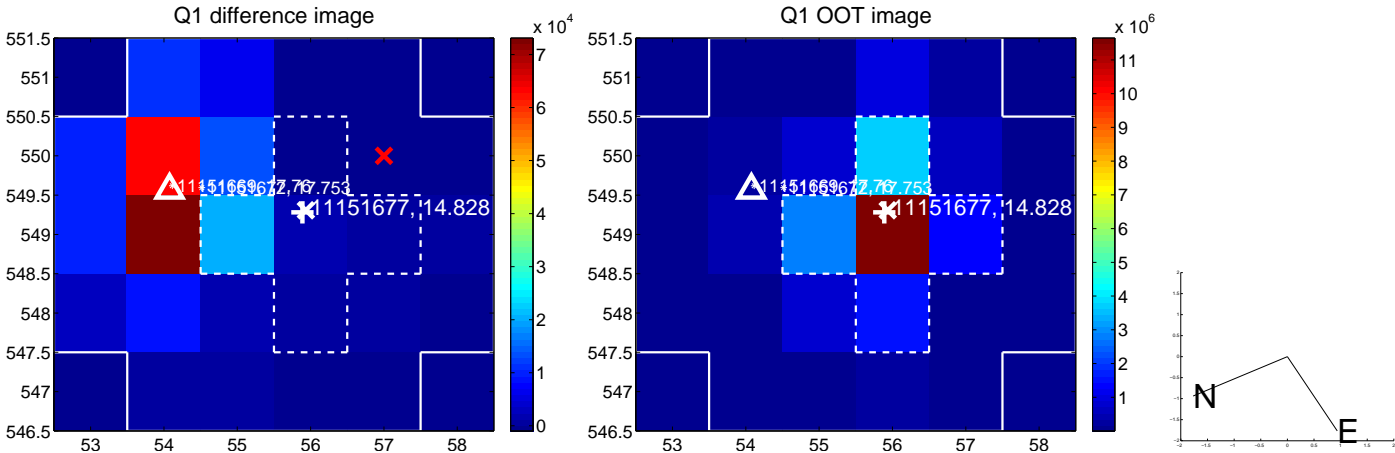
The direct PRF centroid is offset from the target star catalog position by about 0.27 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	7.399 ± 0.072	103.35	-4.325 ± 0.068	6.003 ± 0.073
PRF-fit source offset from KIC position	7.568 ± 0.070	108.69	-4.352 ± 0.068	6.192 ± 0.070
photometric centroid source offset	—	—	—	—

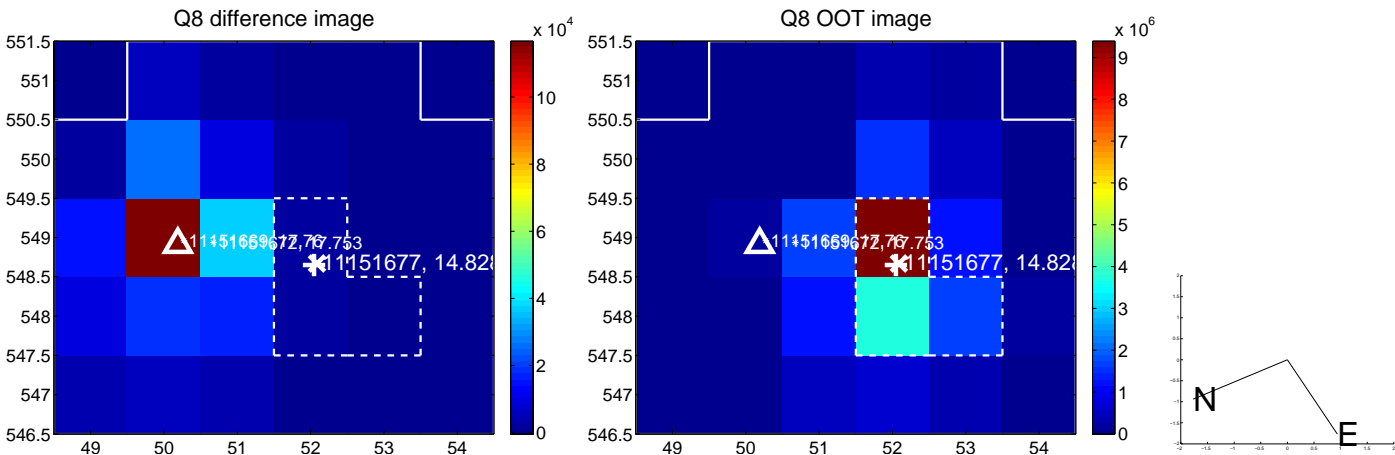
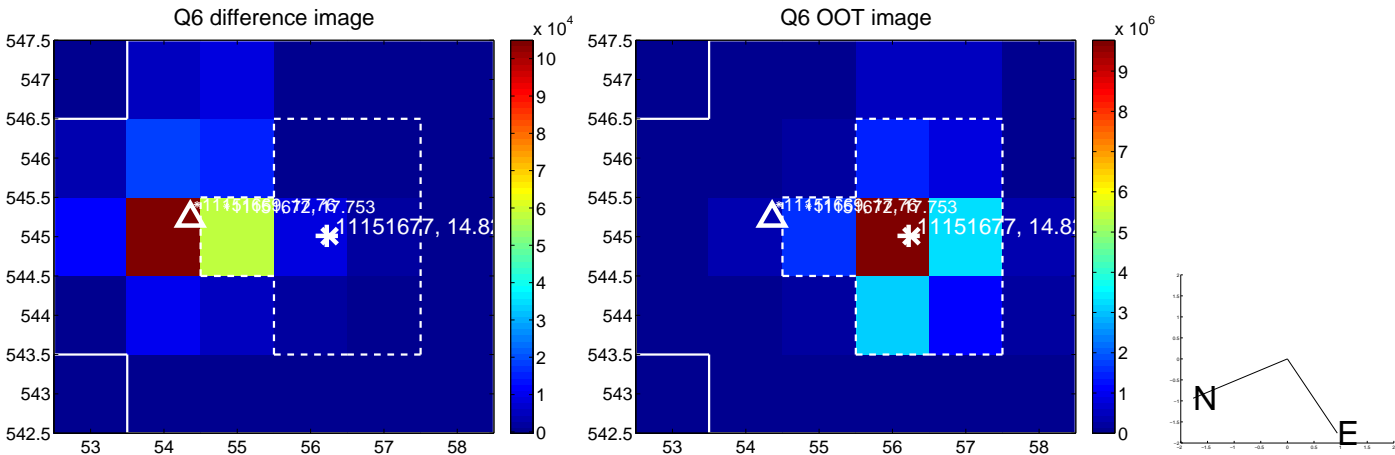
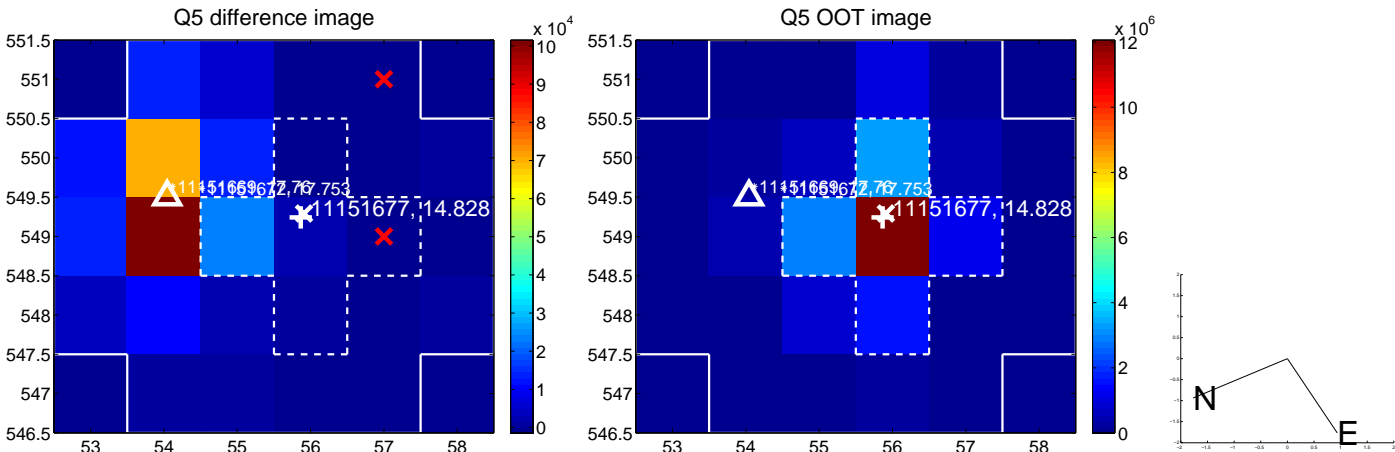


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

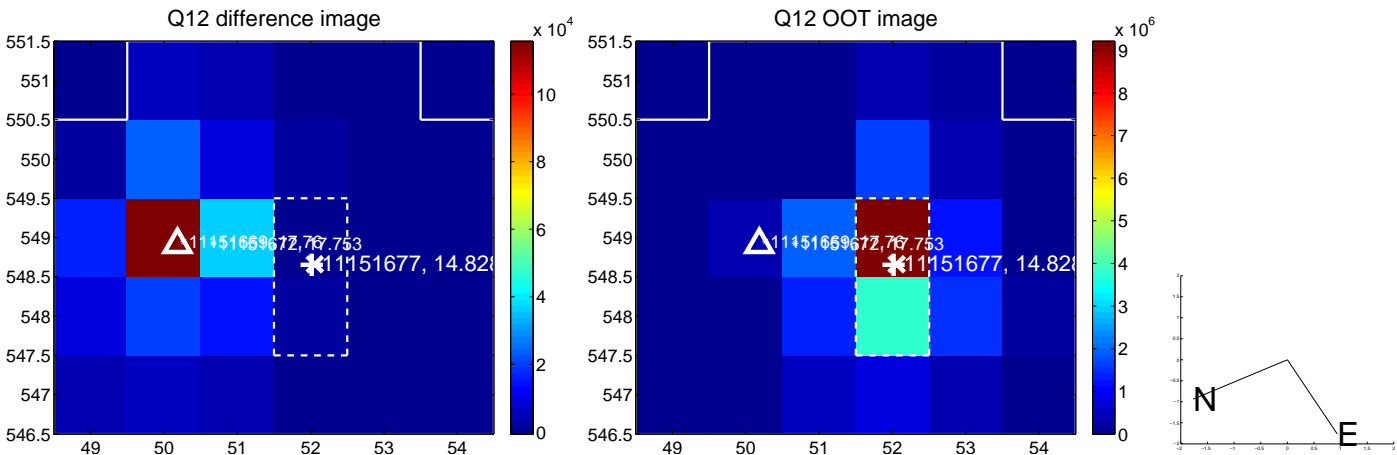
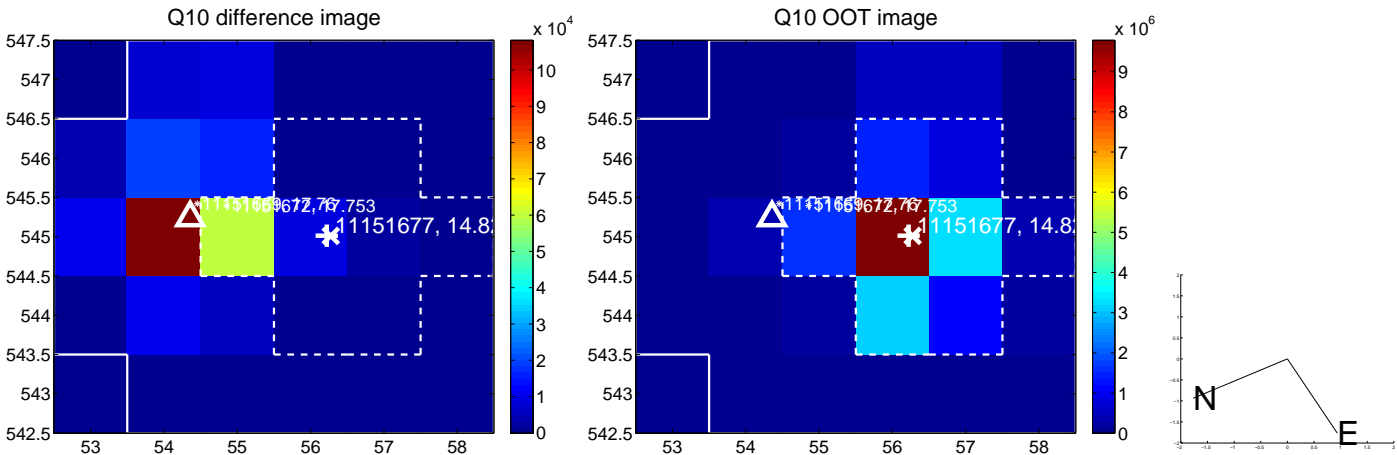
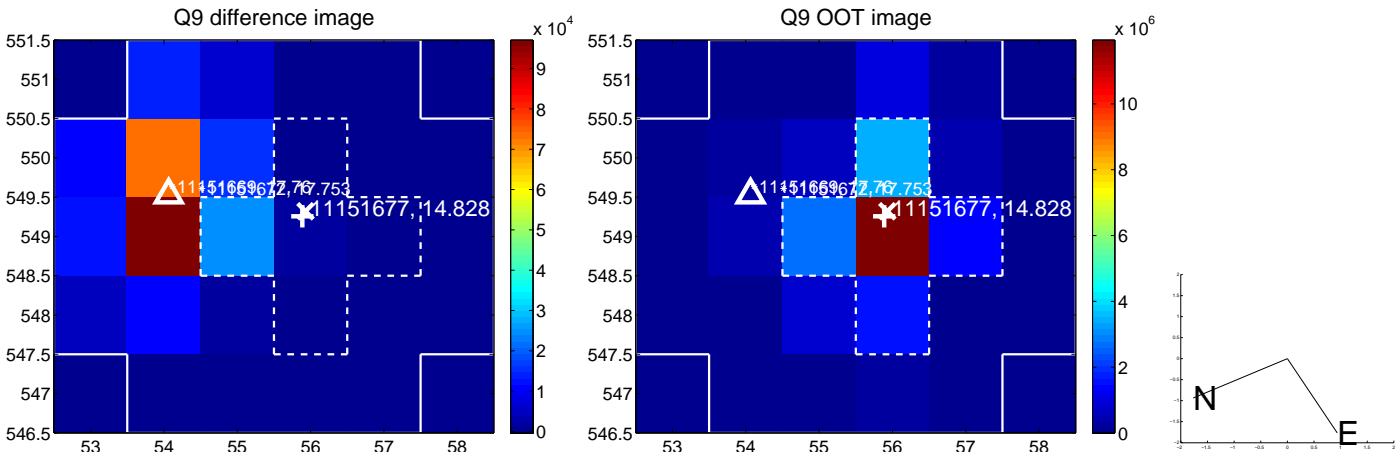
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



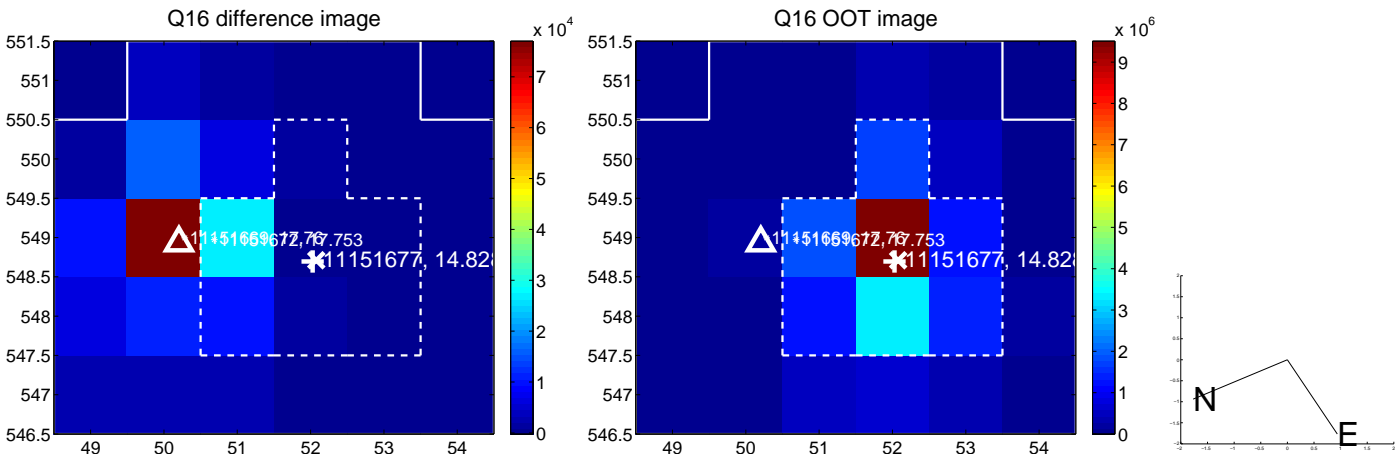
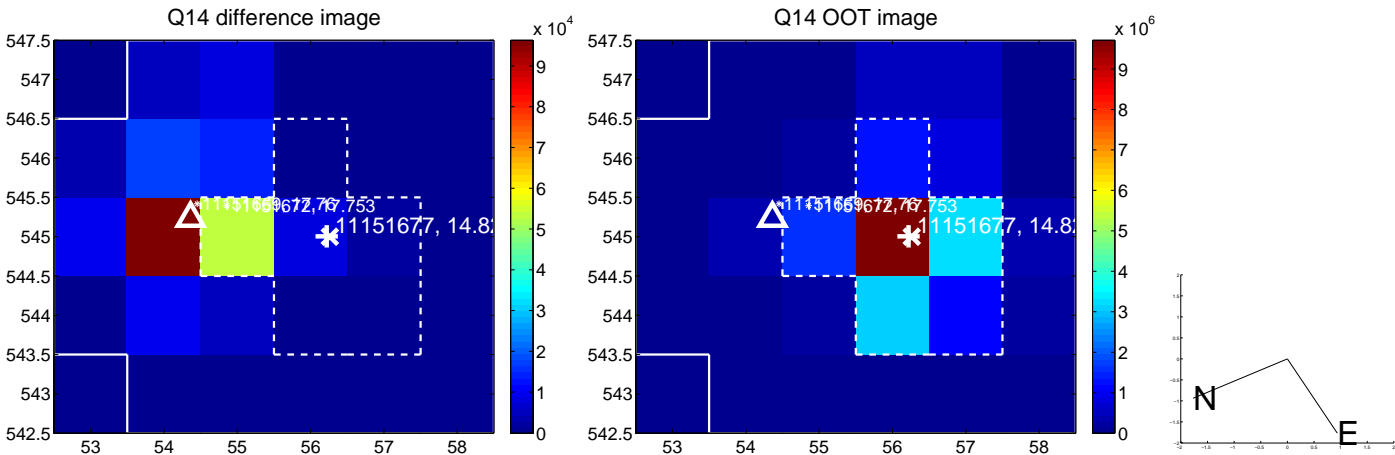
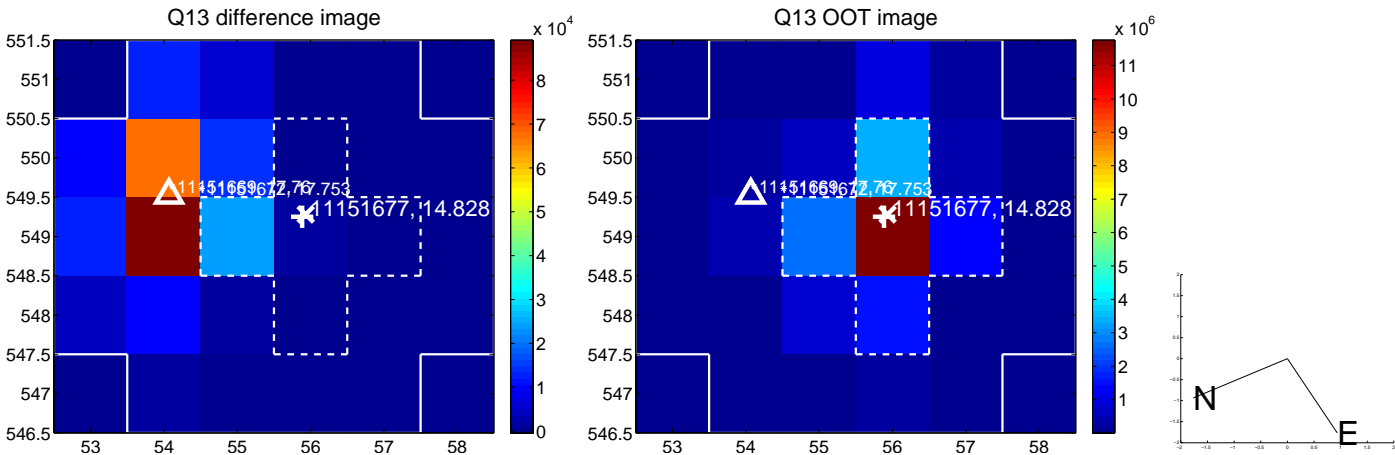
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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.



UKIRT Image

Declination

