

KIC 008445775

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})
008445775-01	OBS	7042.01	13.254135	136.367832	44715.4	4.331	3634.9	3398.1	1.44	6175	48.49	227.90
008445775-02	OBS	No	13.253768	136.477512	621.2	43.324	13.4	21.7	1.44	6175	6.88	227.91

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008445775-01	OBS	FP	0.00	0	1	0	0	DEEP_V_SHAPED
008445775-02	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—RESIDUAL_TCE

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.

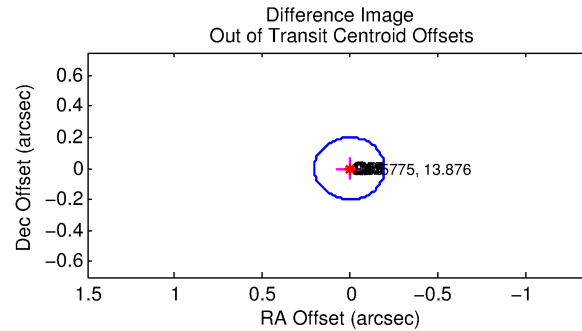
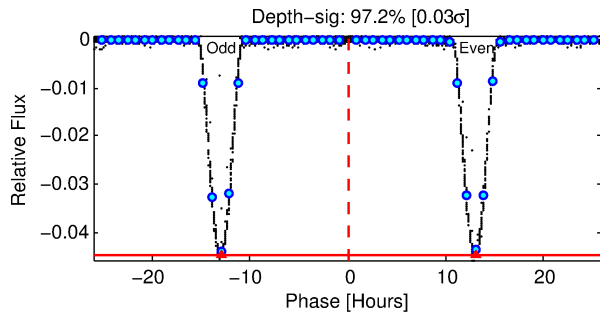
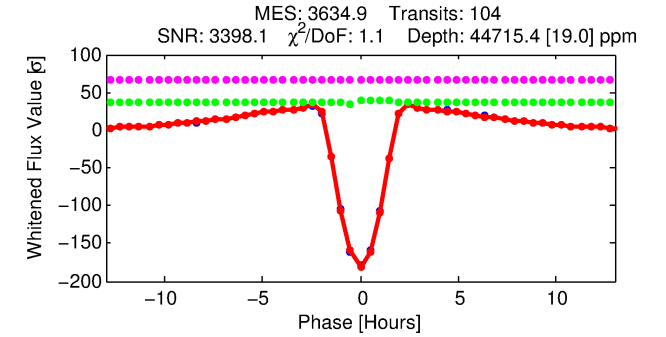
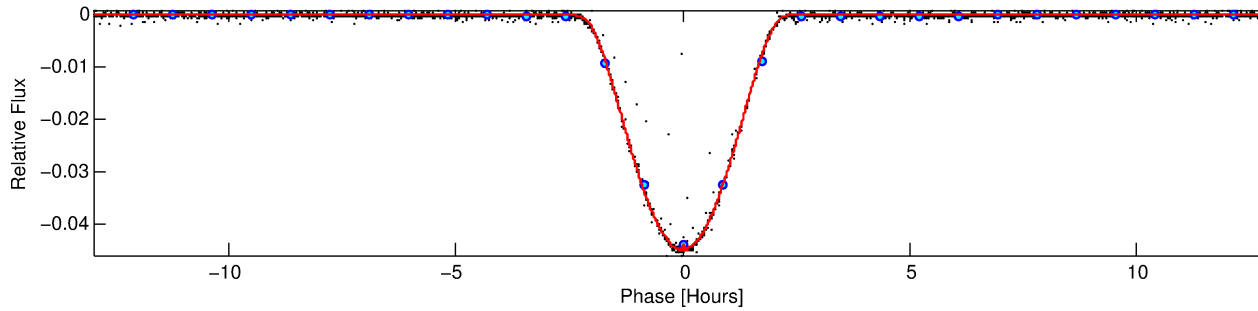
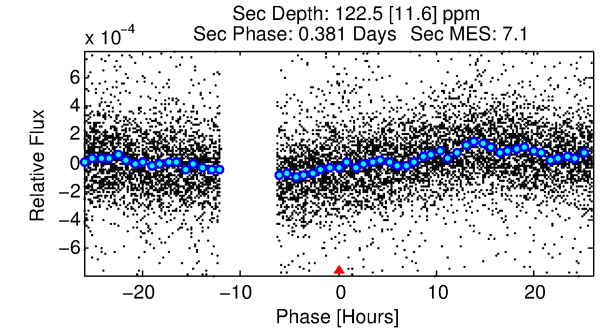
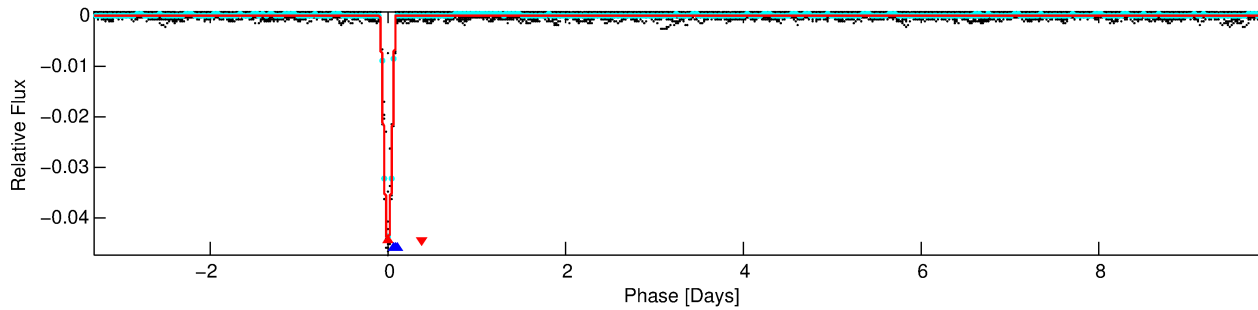
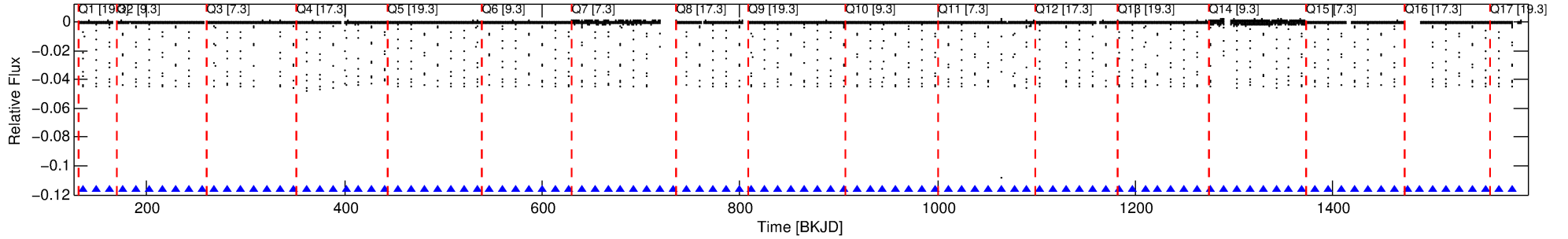
Ephemeris Match Information For 008445775-01

No Significant Match Found

DV One-Page Summary

KIC: 8445775 Candidate: 1 of 2 Period: 13.254 d
KOI: K07042.01 Corr: 0.998

Kp: 13.88 R*: 1.44 Rs Teff: 6175.0 K Logg: 4.11 Fe/H: -0.420



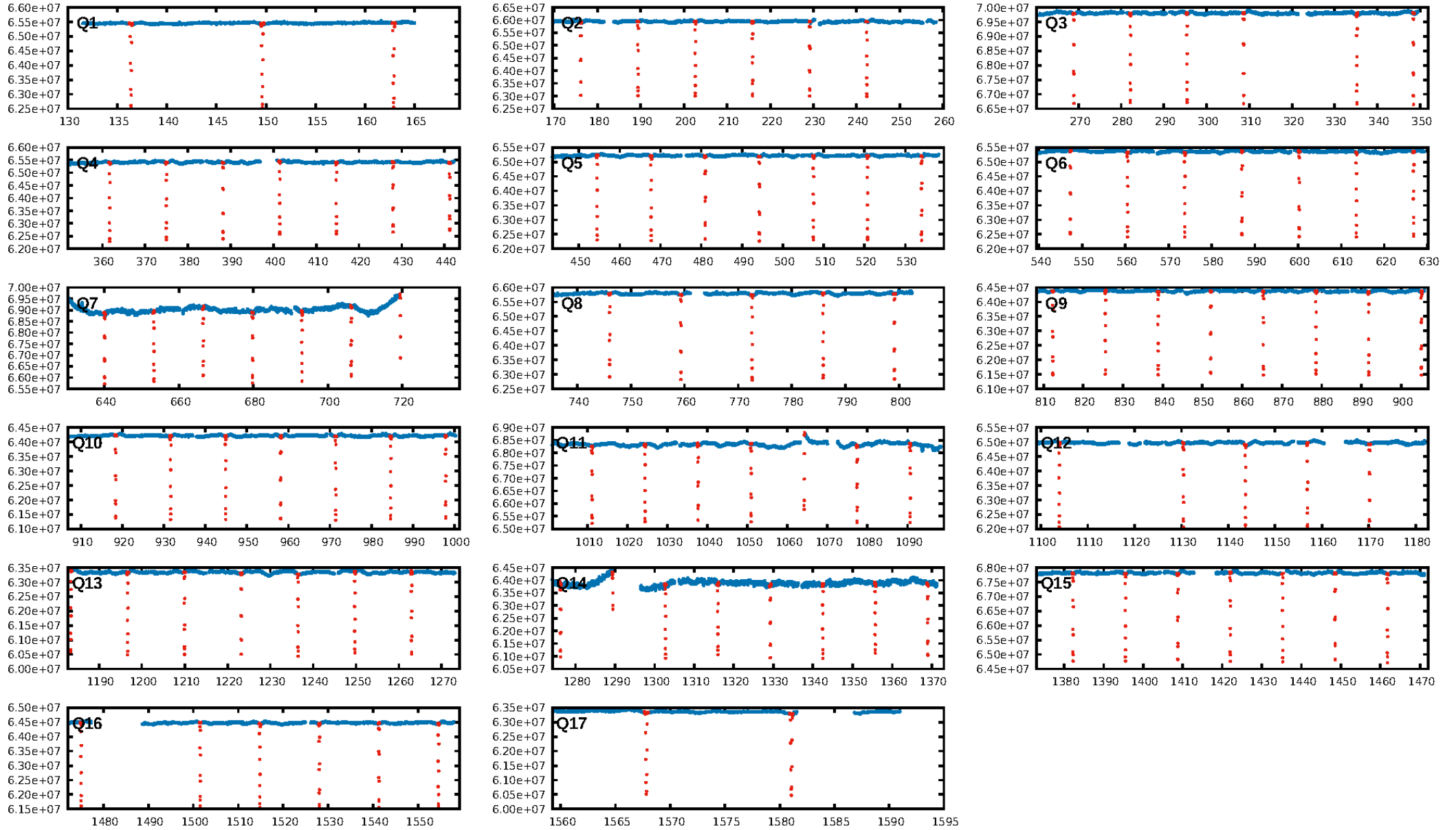
DV Fit Results:

Period = 13.25414 [0.00000] d
Epoch = 136.3678 [0.0000] BKJD
Rp/R* = 0.3094 [0.0064]
a/R* = 20.65 [0.02]
b = 0.97 [0.01]
Seff = 227.90 [126.33]
Teq = 991 [137] K
Rp = 48.49 [16.24] Re
a = 0.1086 [0.0359] AU
Ag = 0.34 [0.19] [-3.58σ]
Teffp = 1168 [49] K [1.21σ]

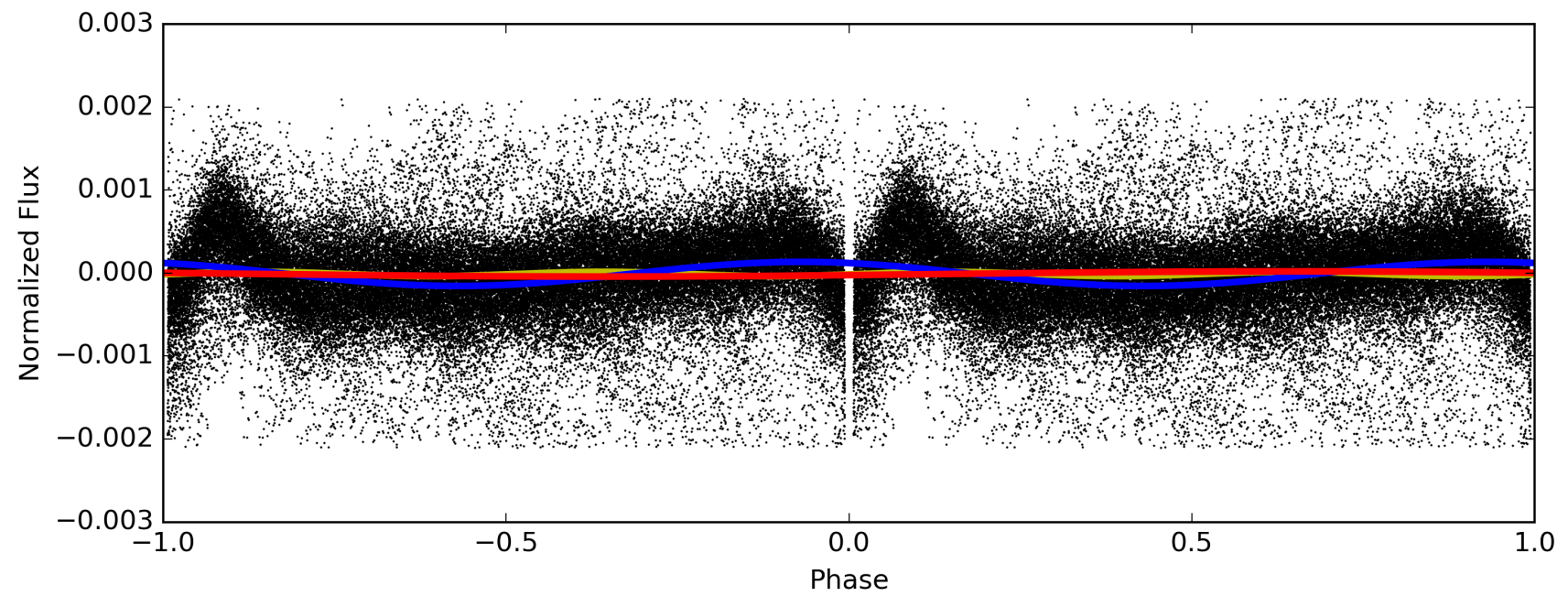
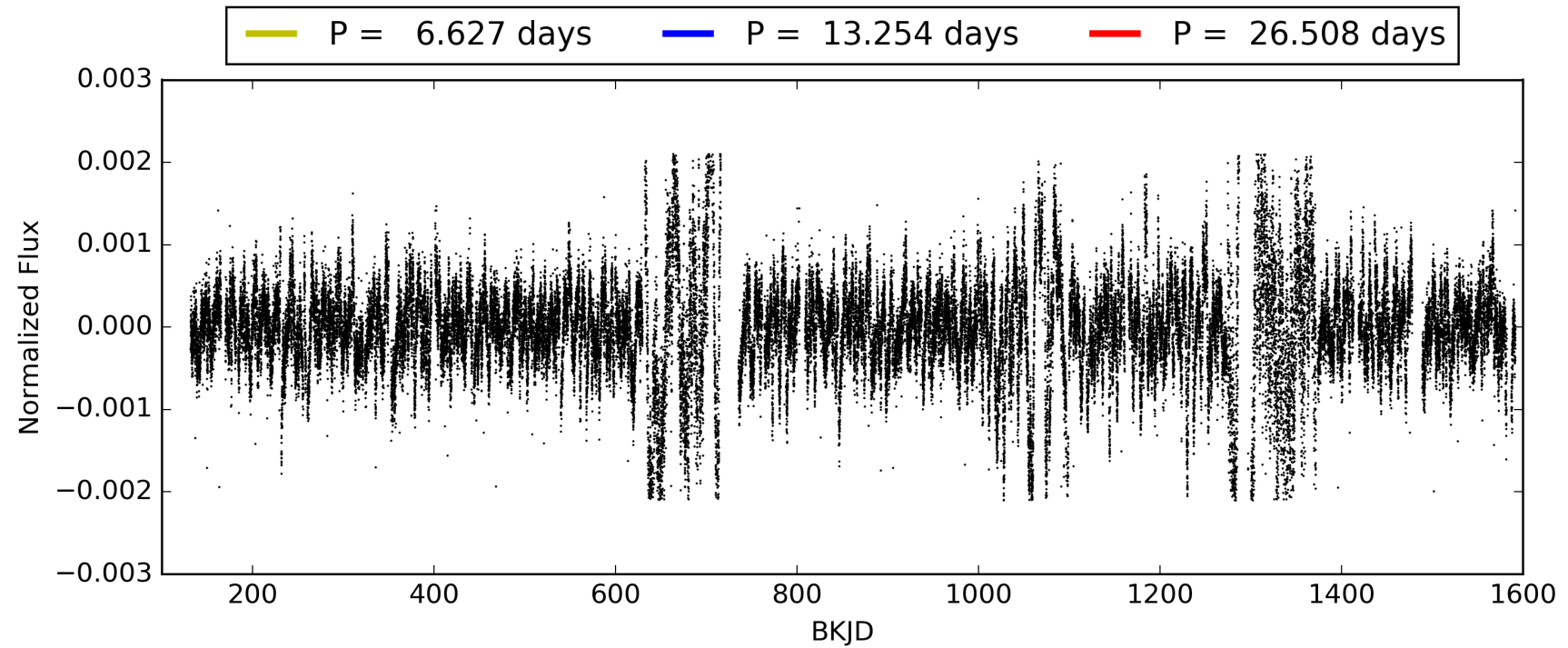
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [99/99]
GhostDiagnostic-chr: 5.847
Centroid-sig: 0.0%
Centroid-so: 0.137 arcsec [51.68σ]
OotOffset-rm: 0.006 arcsec [0.08σ]
KicOffset-rm: 0.097 arcsec [1.41σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 1.00 [17/17]
DiffImageOverlap-fno: 0.00 [0/17]

TCE 008445775-01, PDC Light Curves

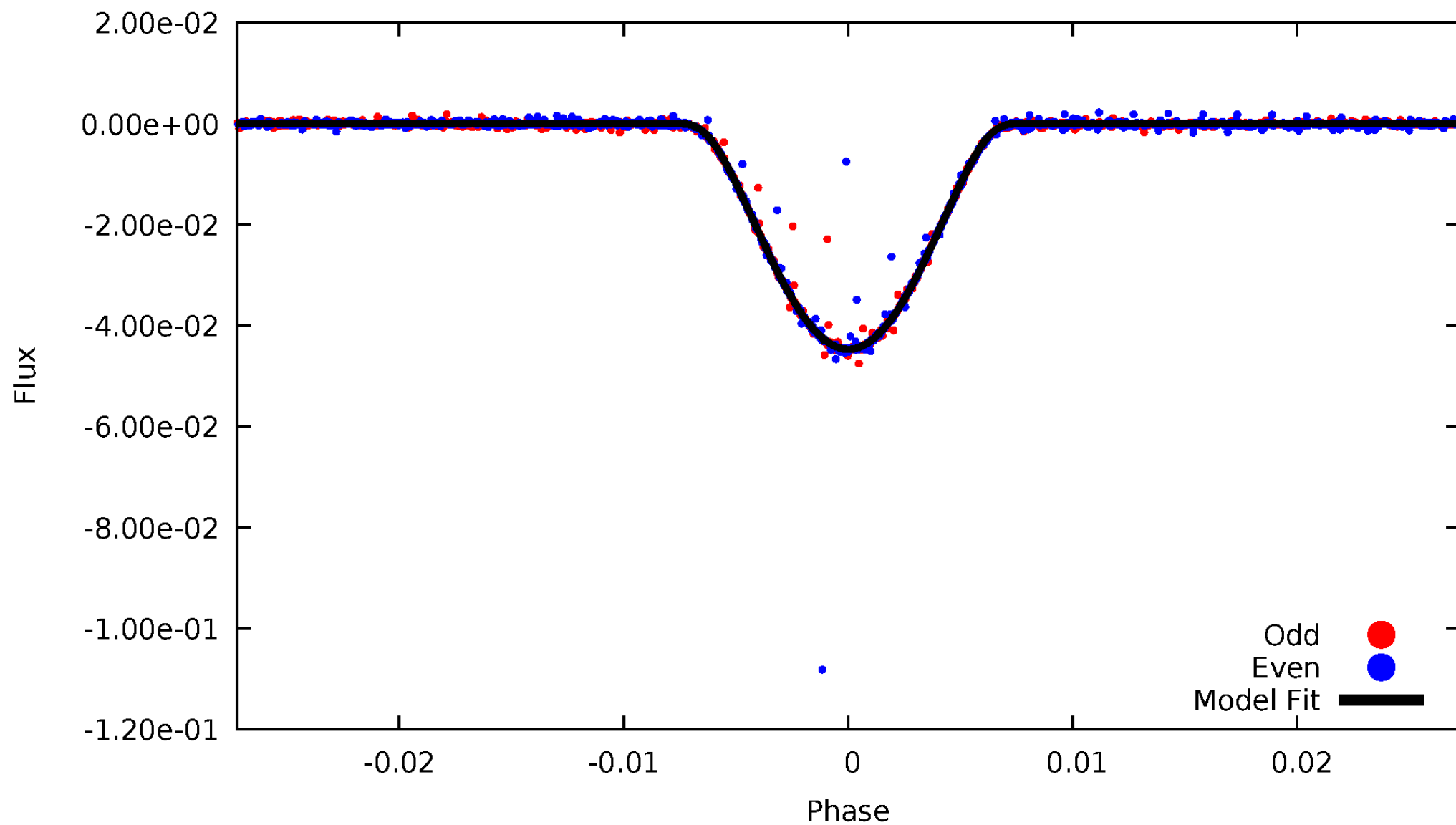


TCE 008445775-01



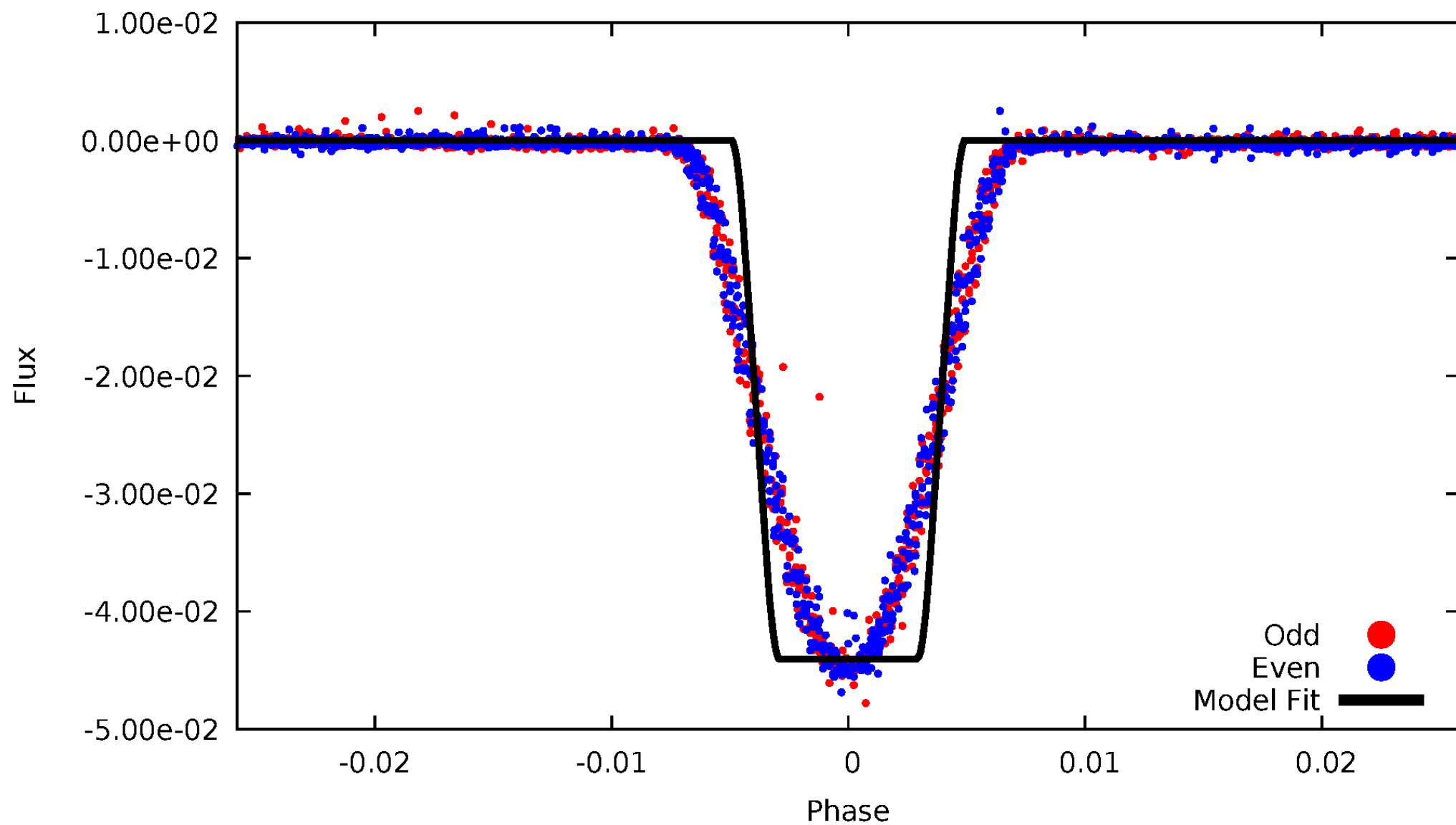
DV Odd/Even

TCE 008445775-01



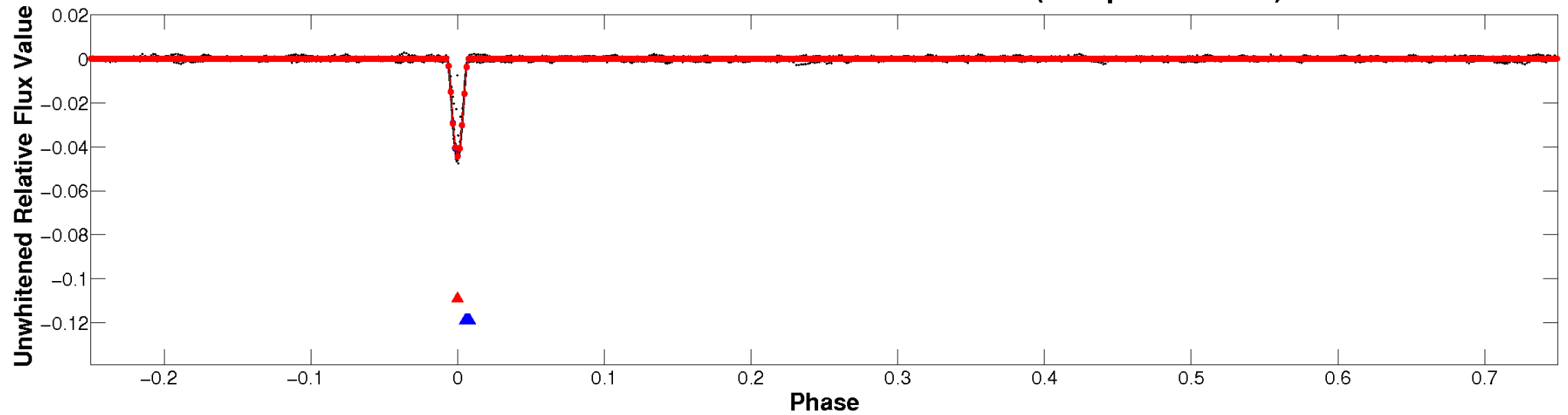
ALT Odd/Even

TCE 008445775-01

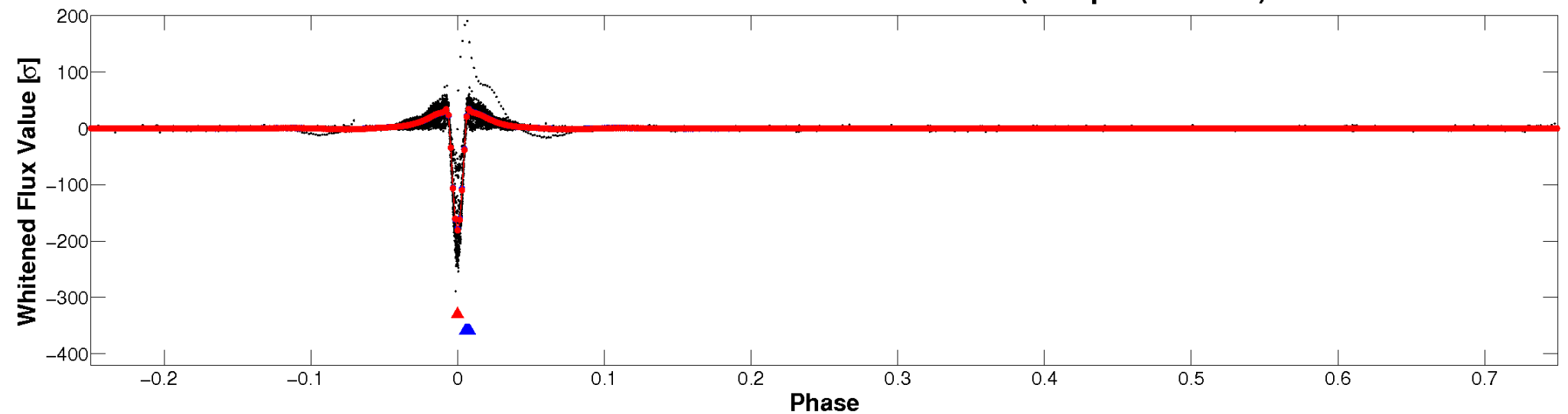


Non-Whitened Vs. Whitened Light Curve

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

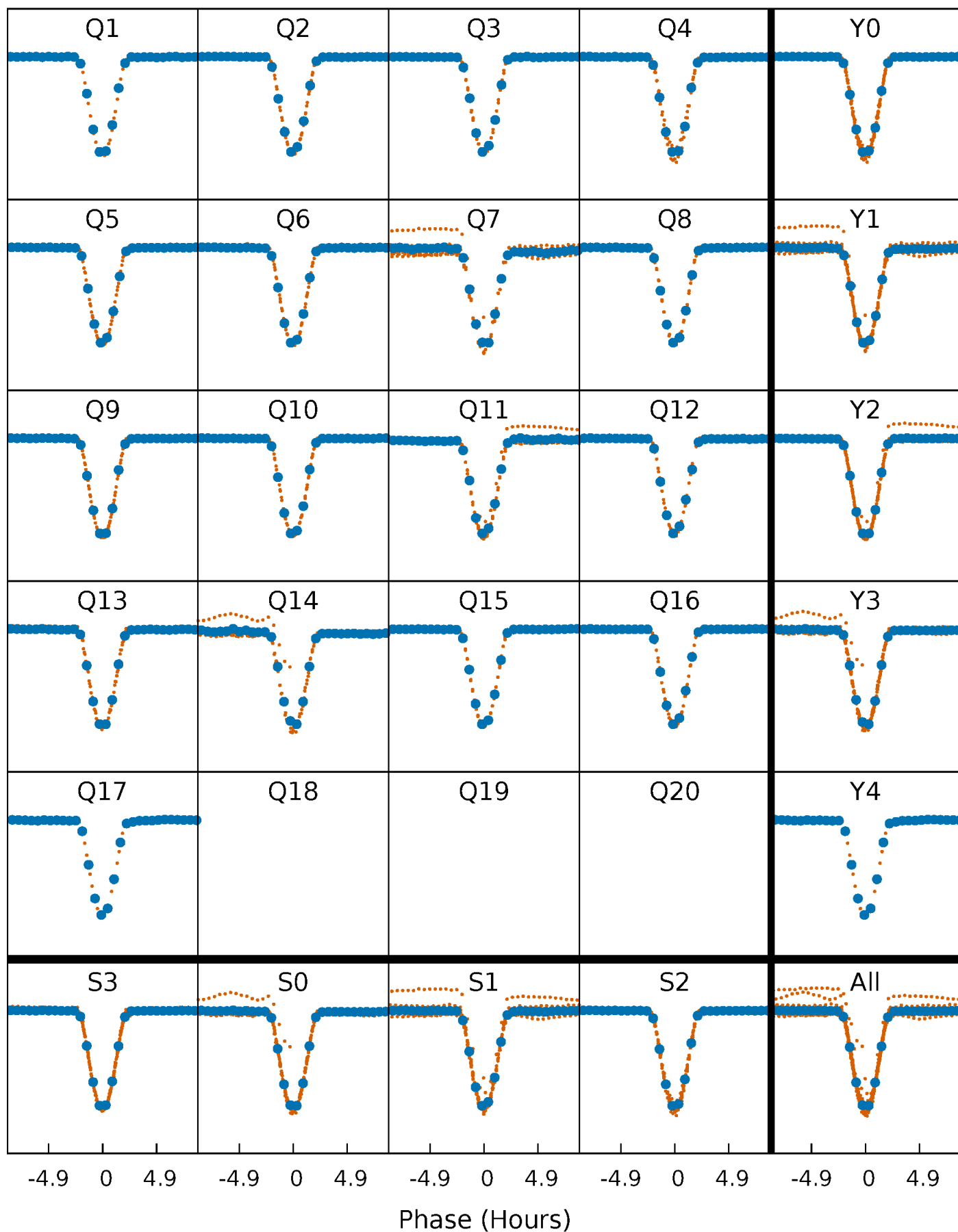


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



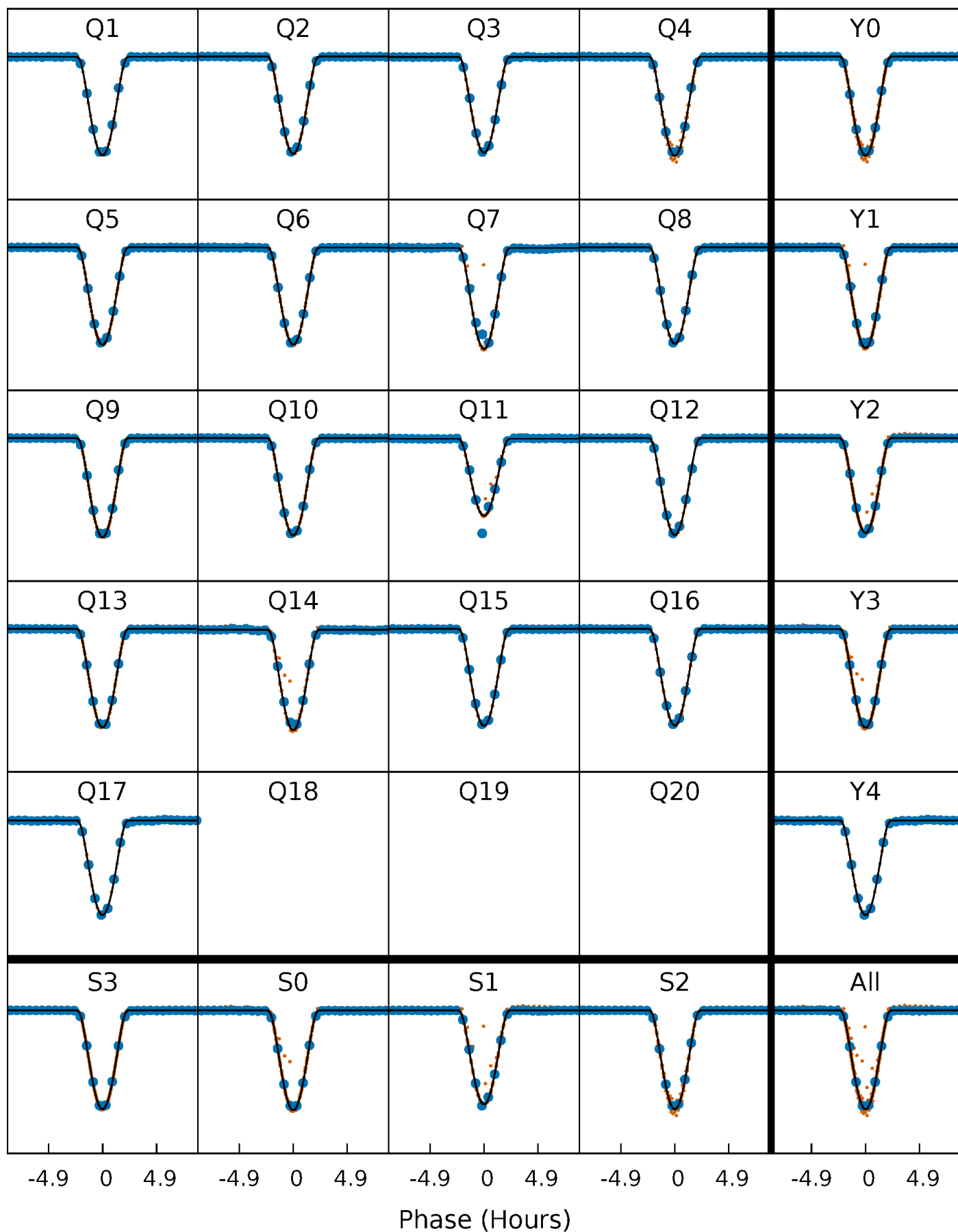
PDC Quarter-Phased Transit Curves

TCE 008445775-01 P= 13.254135 Days $T_0=136.367832$ (BKJD)



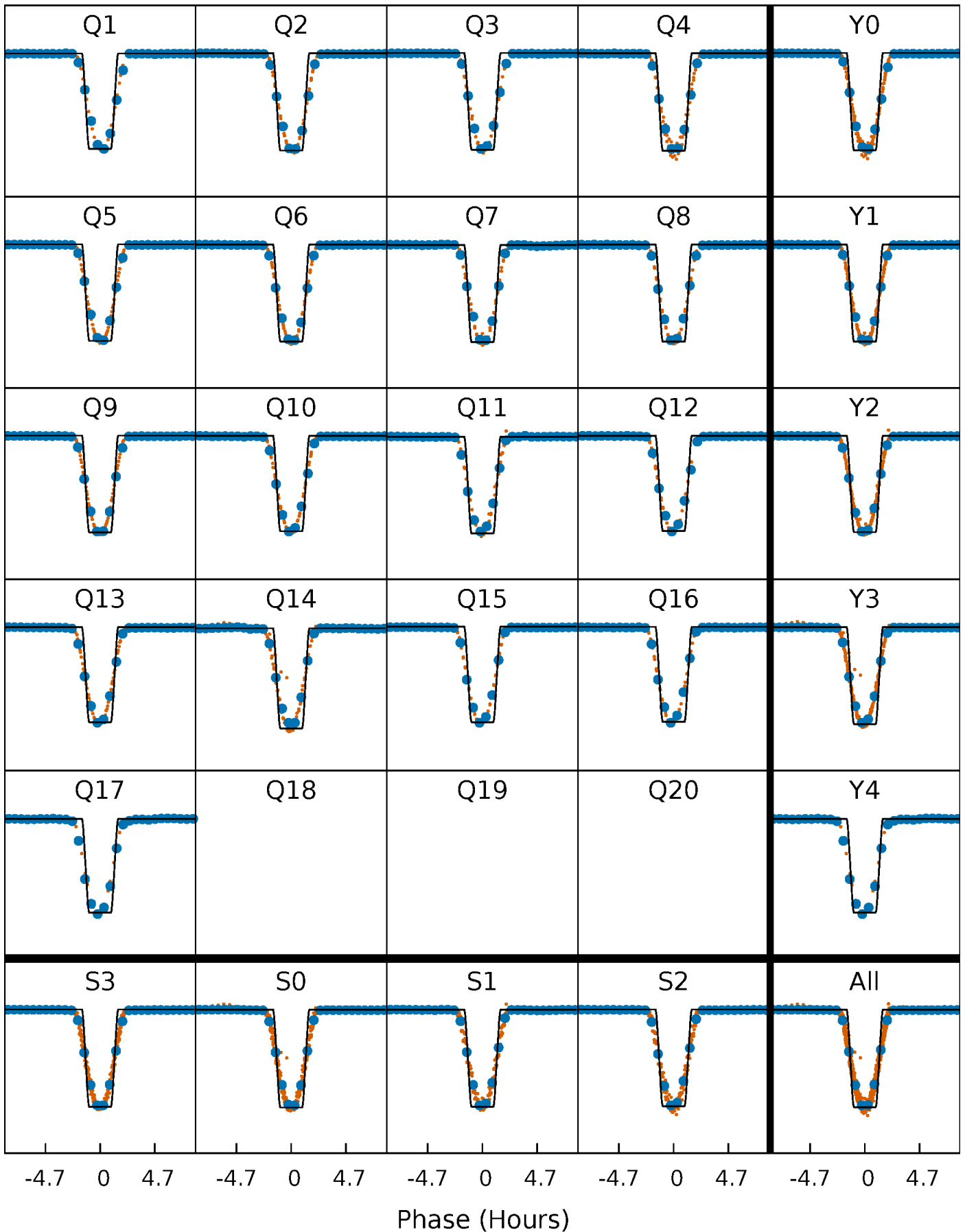
DV Quarter-Phased Transit Curves

TCE 008445775-01 P= 13.254135 Days $T_0=136.367832$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

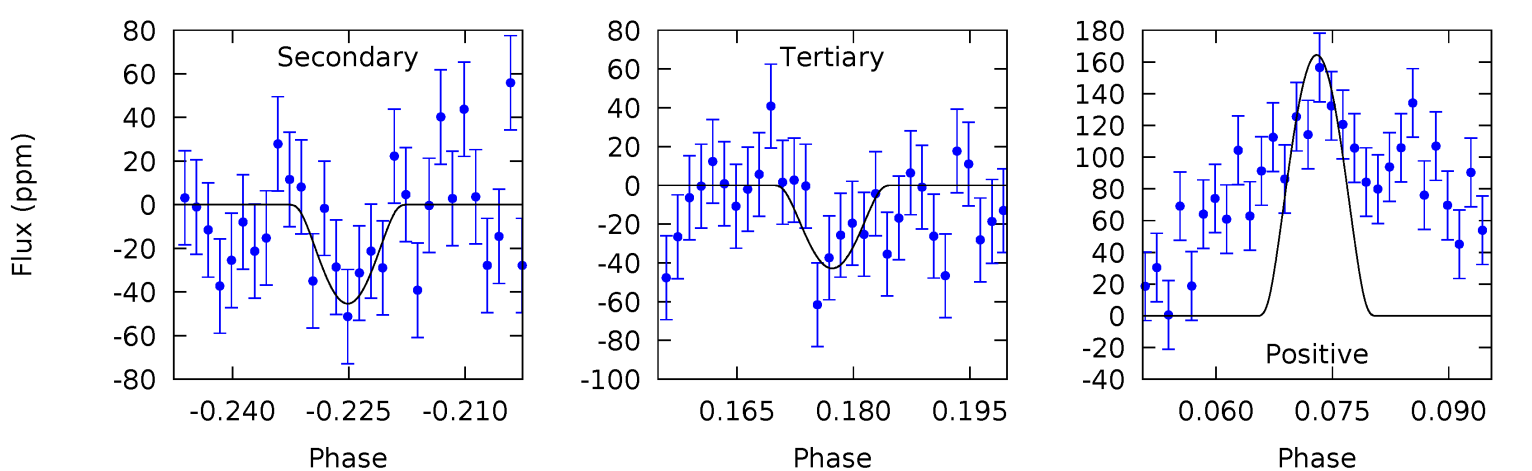
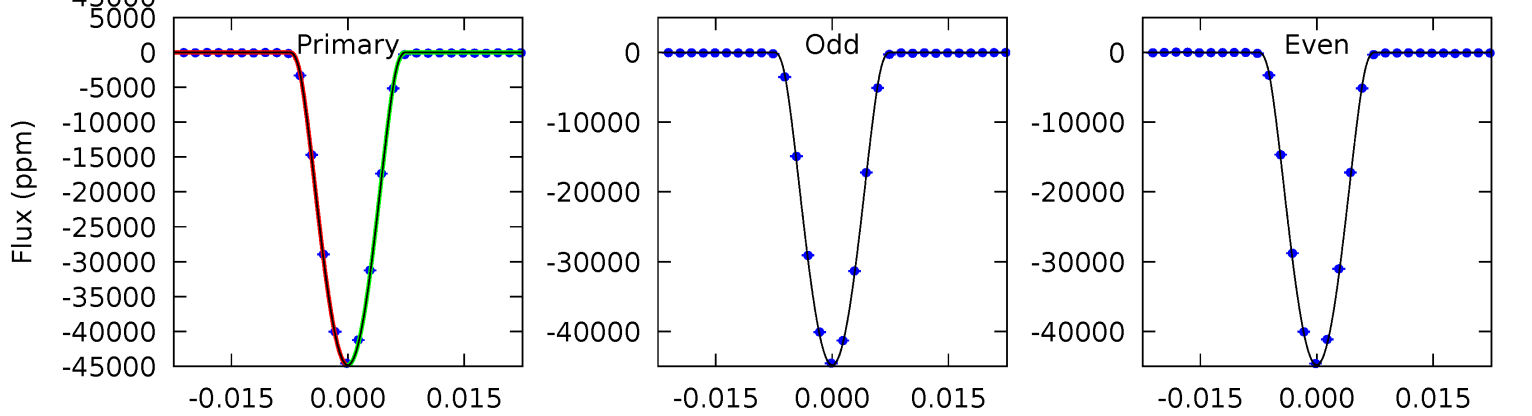
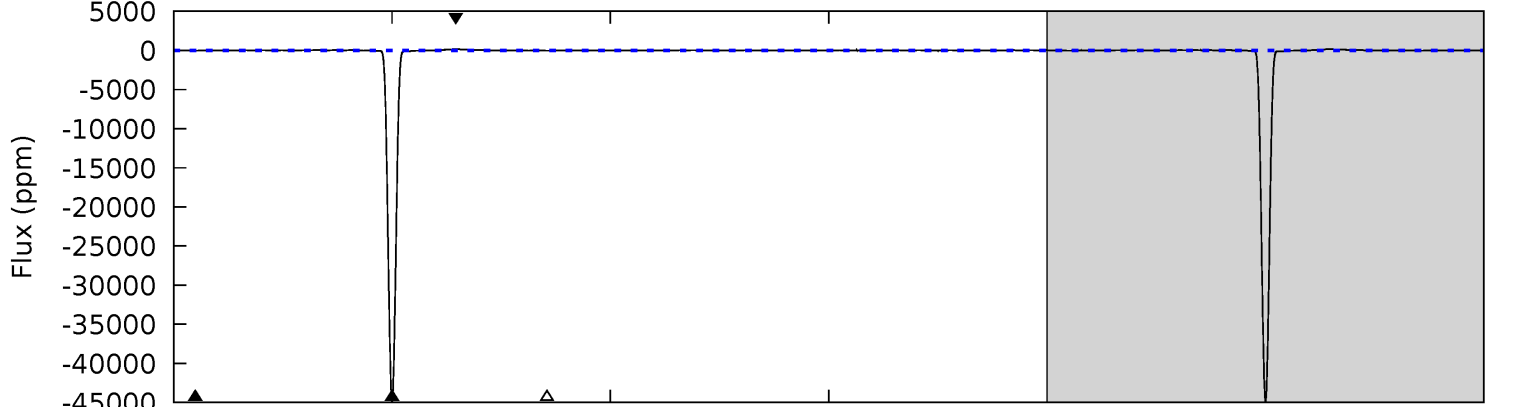
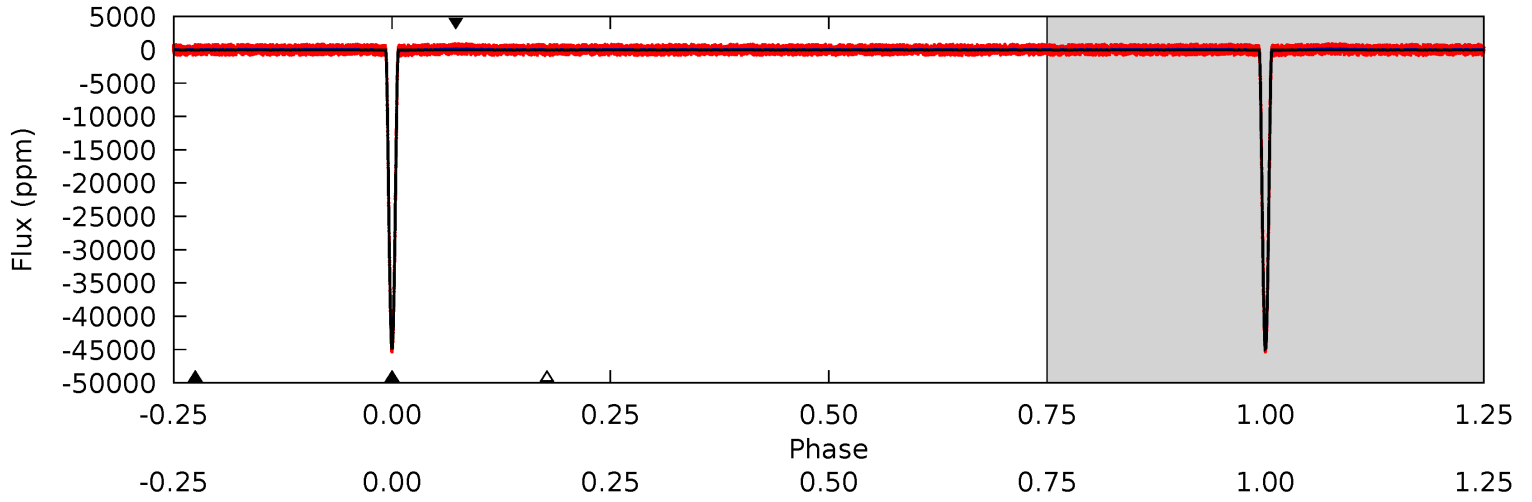
TCE 008445775-01 P= 13.254239 Days $T_0=136.362516$ (BKJD)



DV Model-Shift Uniqueness Test

008445775-01, P = 13.254135 Days, E = 123.113697 Days

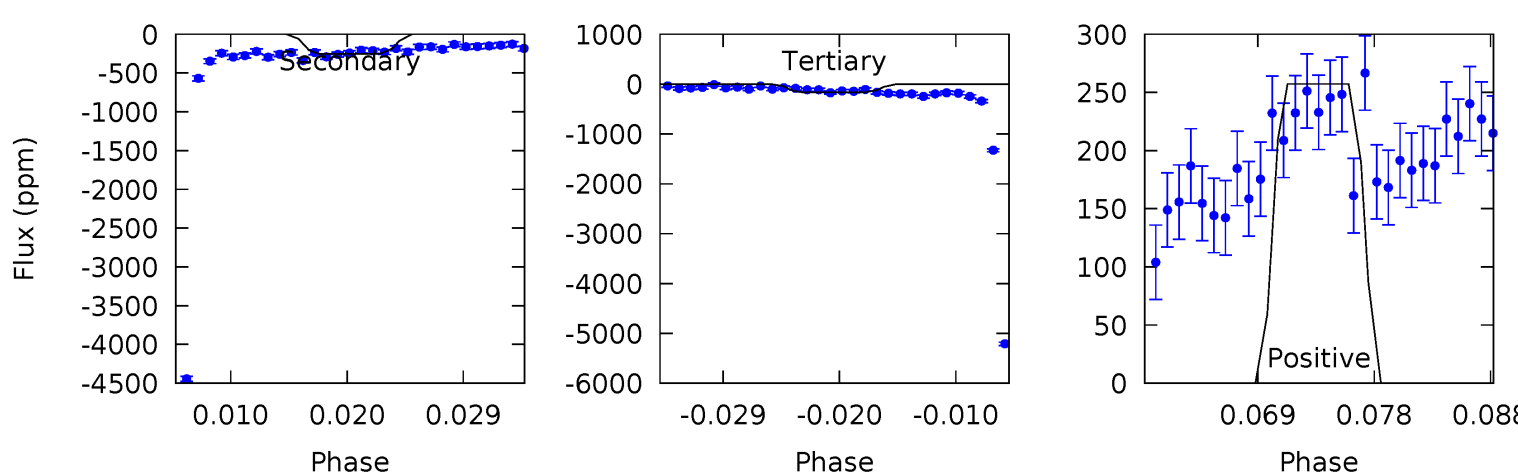
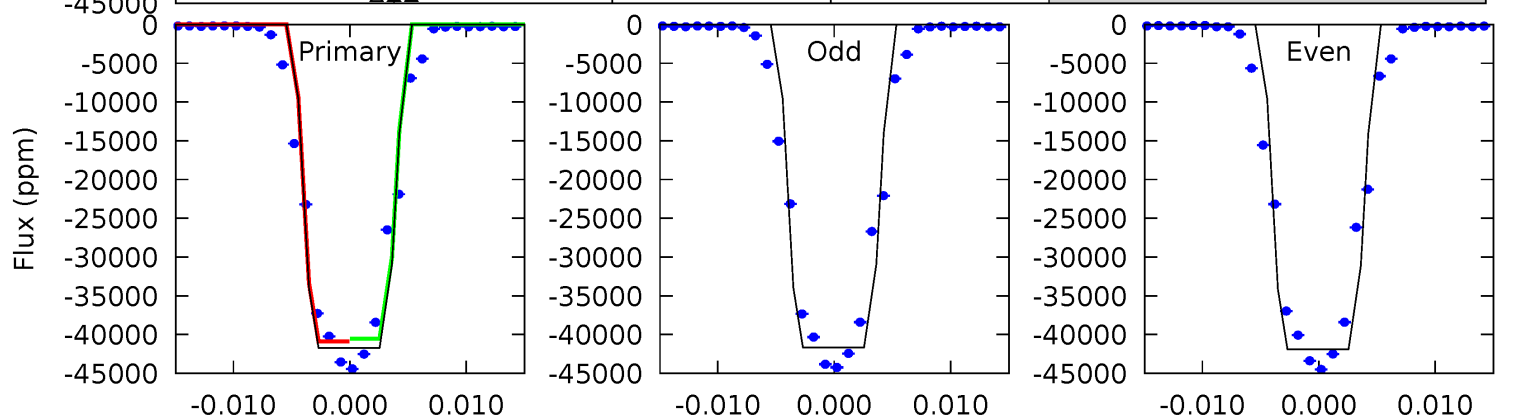
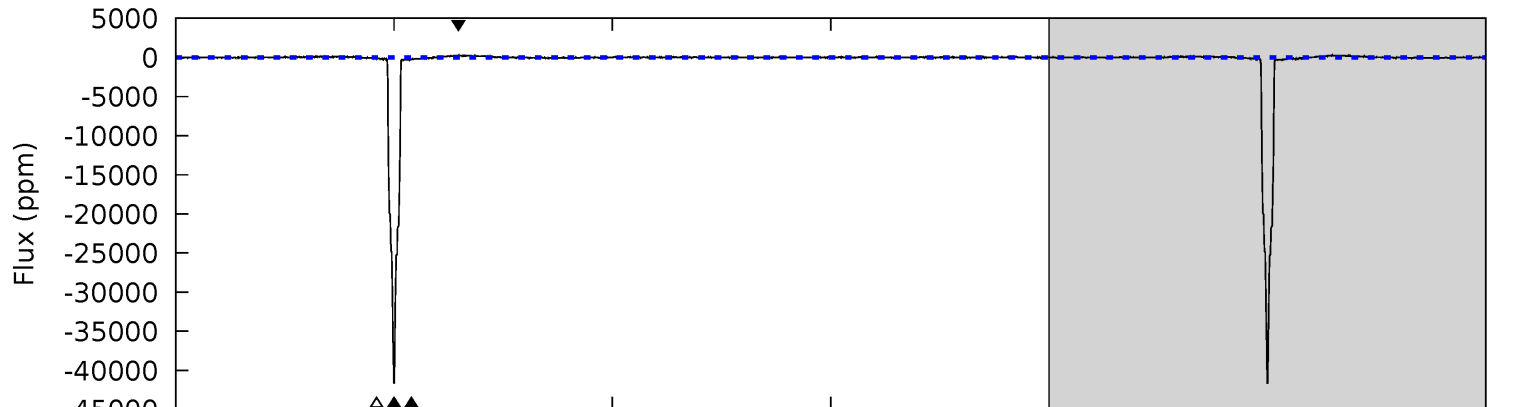
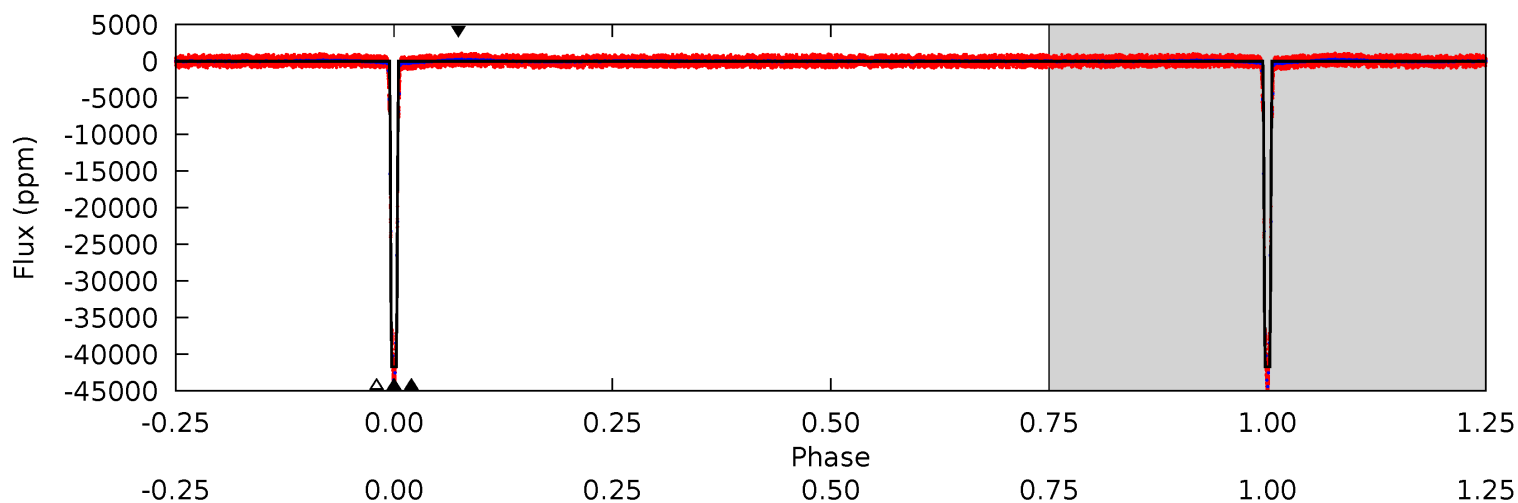
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6342	6.42	6.06	23.3	4.95	2.43	4.53	6336	6319	0.36	-16.8	2.47	0.99	0.00	1.81



Alt Model-Shift Uniqueness Test

008445775-01, P = 13.254239 Days, E = 123.108277 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2485	15.1	9.98	15.3	5.03	2.58	3.55	2475	2470	5.07	-0.27	6.82	0.99	0.01	0



Stellar Parameters For KIC 008445775

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6175^{+188}_{-206}	$4.111^{+0.319}_{-0.147}$	$-0.420^{+0.300}_{-0.300}$	$1.436^{+0.393}_{-0.480}$	$0.970^{+0.147}_{-0.120}$	$0.462^{+0.996}_{-0.215}$
	+3%/-3%	+8%/-4%	+71%/-71%	+27%/-33%	+15%/-12%	+216%/-47%
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 008445775-01 / KOI 7042.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-45 ± 7	$47.35^{+7.44}_{-8.58}$	1362^{+103}_{-124}	-1973^{+162}_{-96}	$0.134^{+0.070}_{-0.039}$
Alt.	-253 ± 17	$32.13^{+5.33}_{-5.92}$	1363^{+117}_{-137}	2475^{+54}_{-57}	$1.595^{+0.847}_{-0.405}$

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

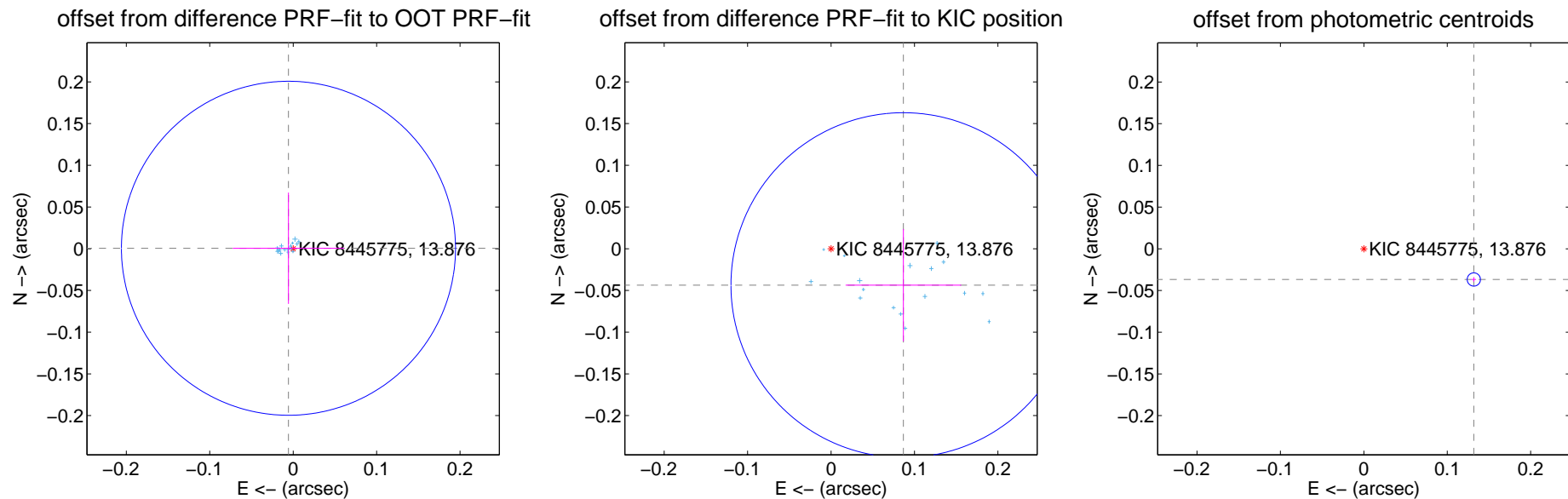
DV Centroid Data

Supplemental centroid analysis for 008445775-01. Kepler magnitude: 13.88. Transit SNR 3398.10

There are 17 quarters with good PRF difference image offsets

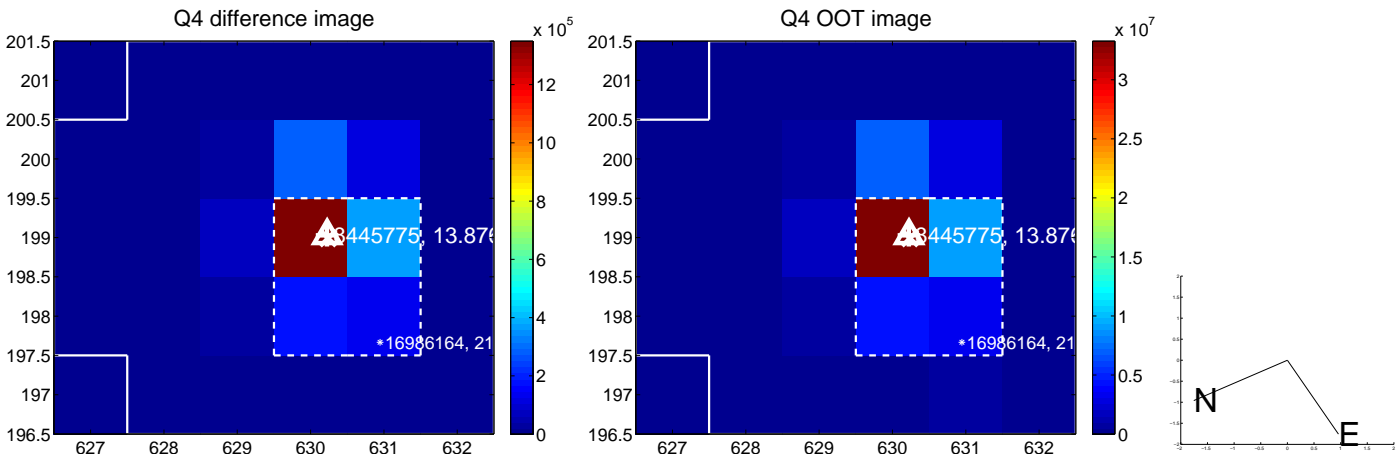
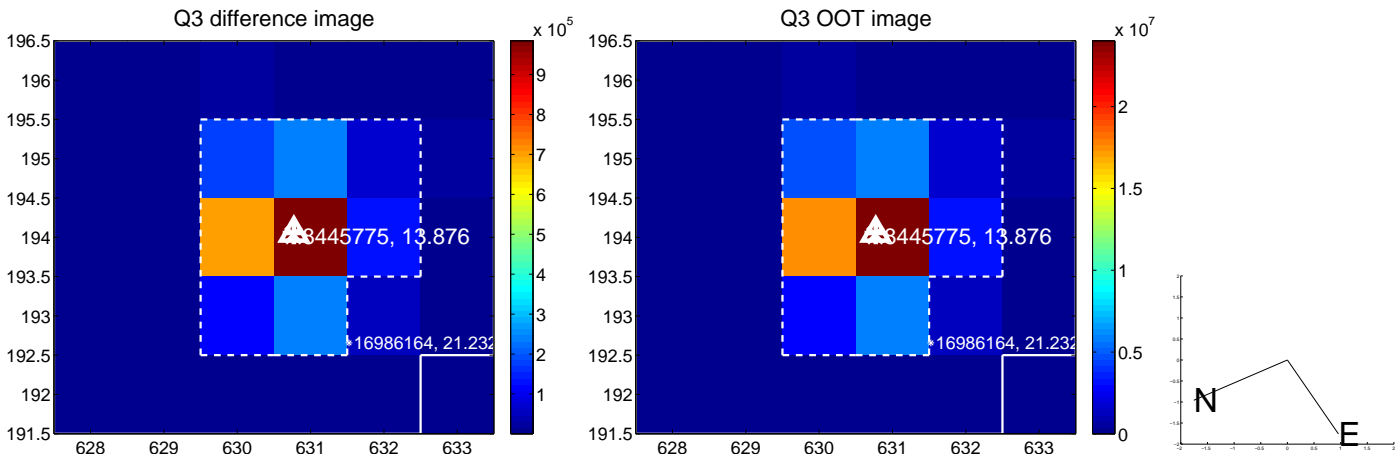
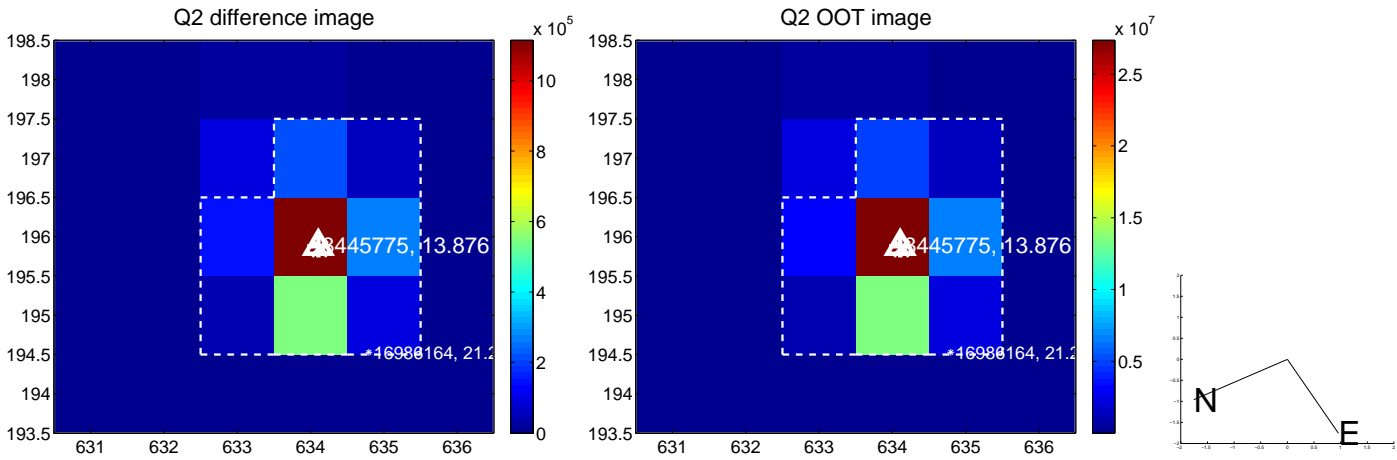
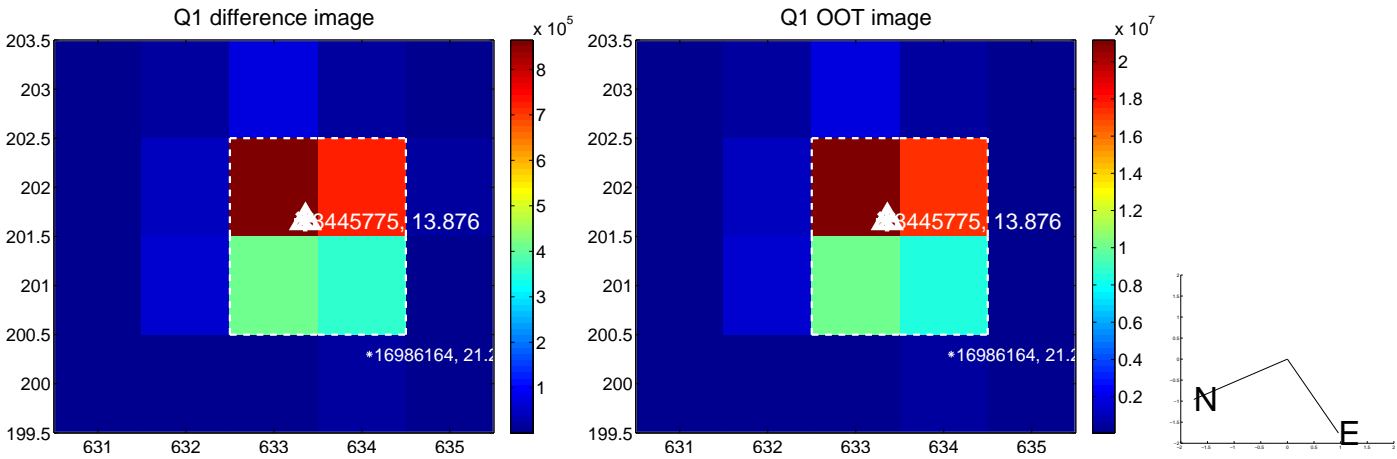
The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.006 ± 0.067	0.08	0.006 ± 0.067	0.001 ± 0.067
PRF-fit source offset from KIC position	0.097 ± 0.069	1.41	-0.087 ± 0.069	-0.044 ± 0.067
photometric centroid source offset	0.14 ± 0.00	51.68	-0.13 ± 0.00	-0.04 ± 0.00

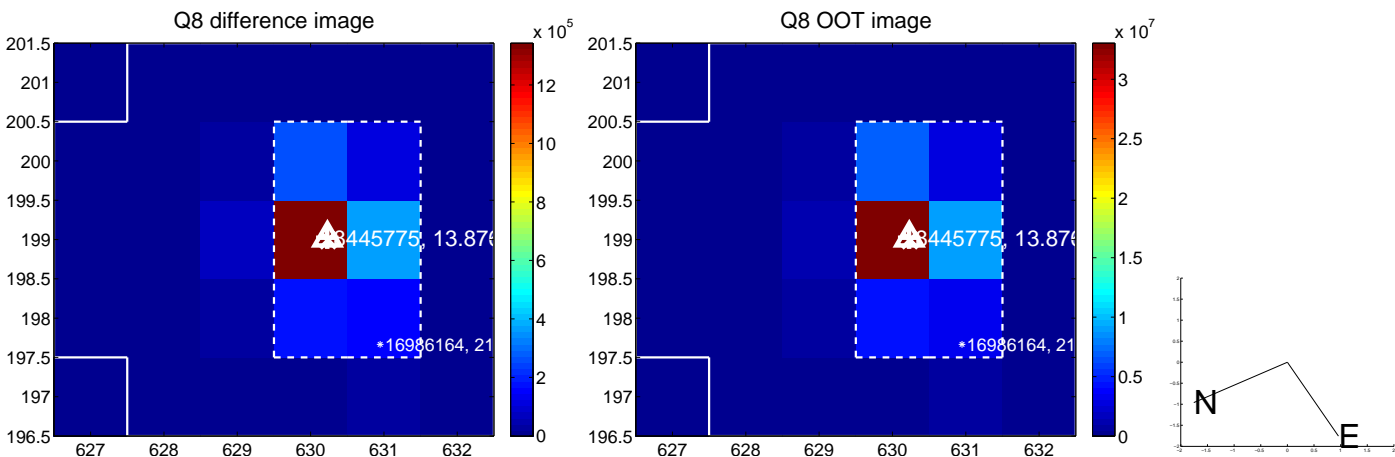
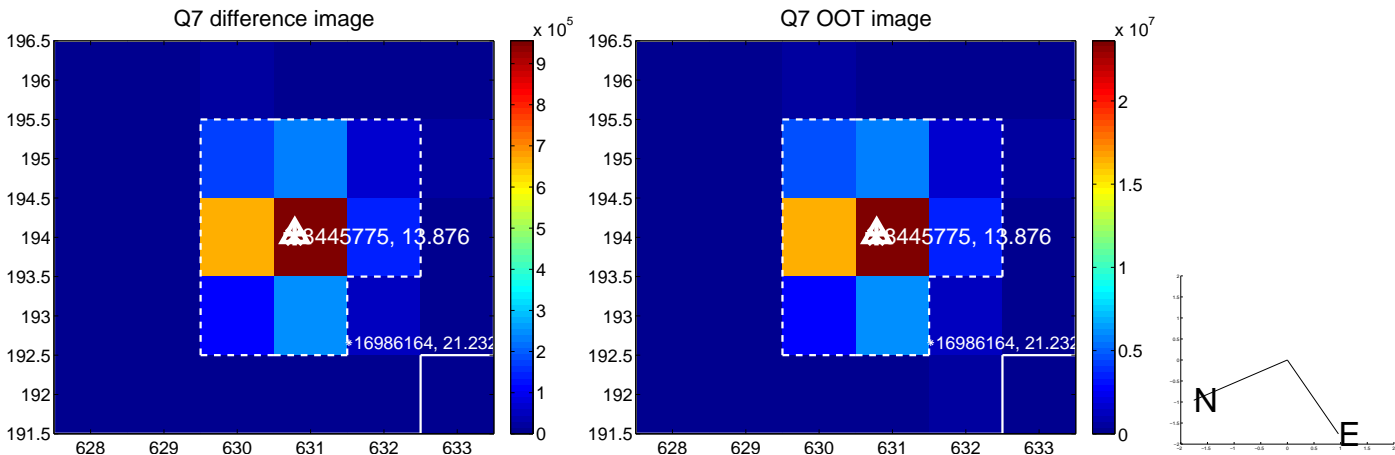
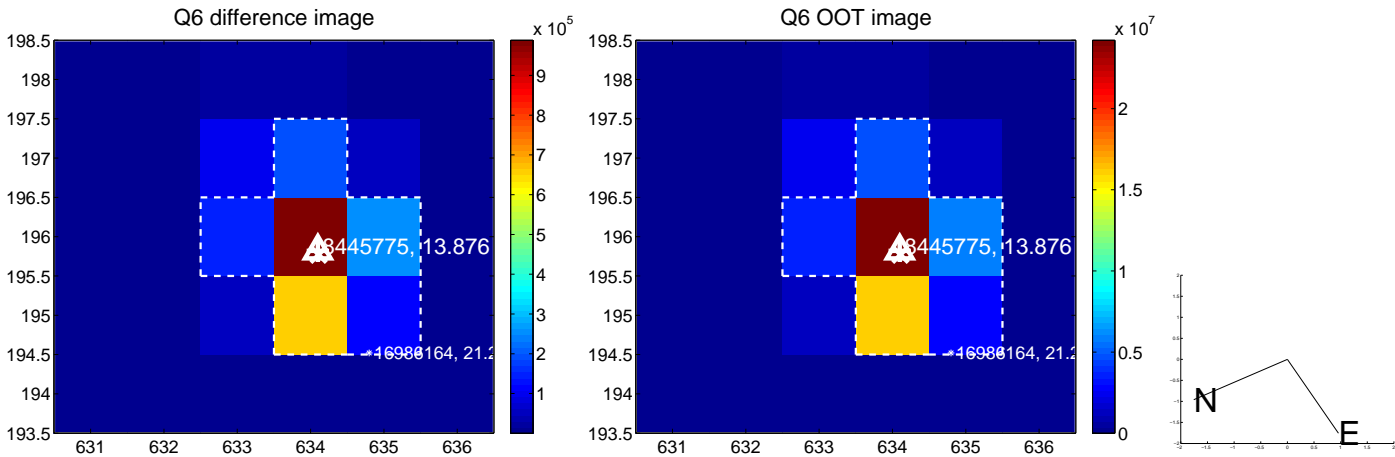
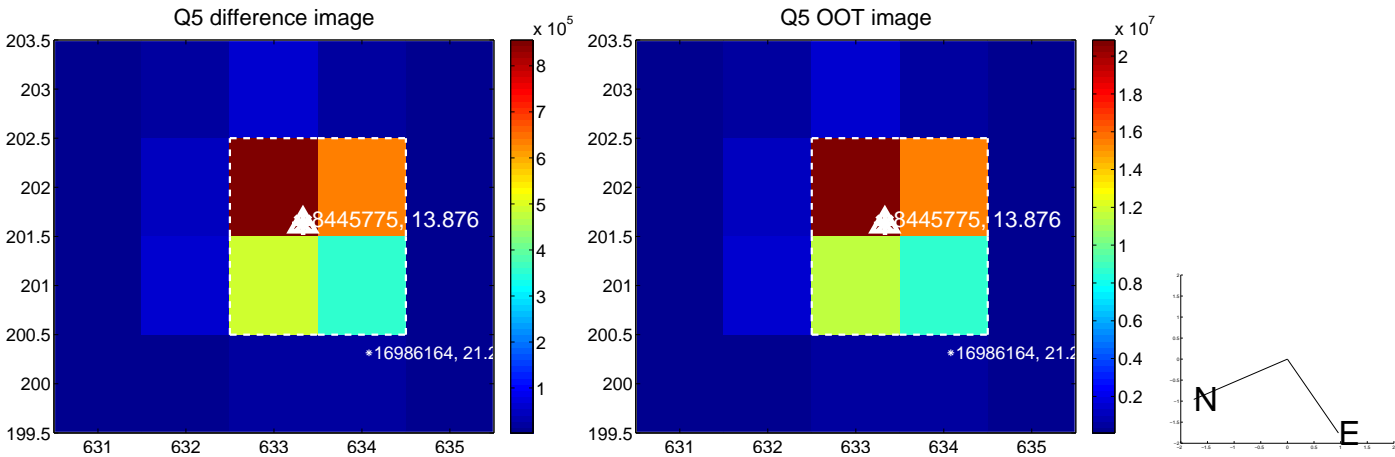


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

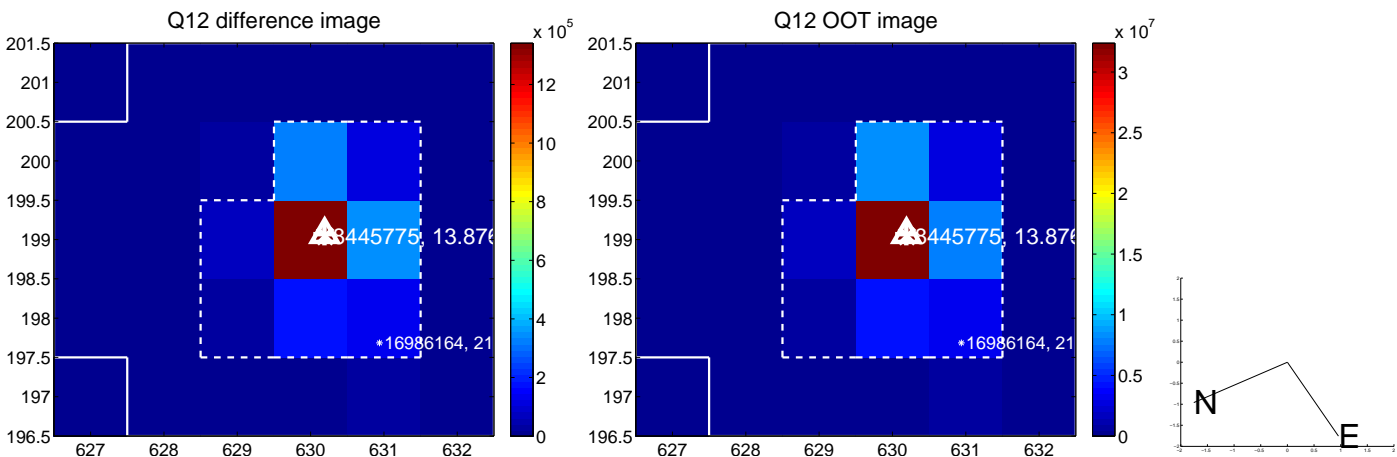
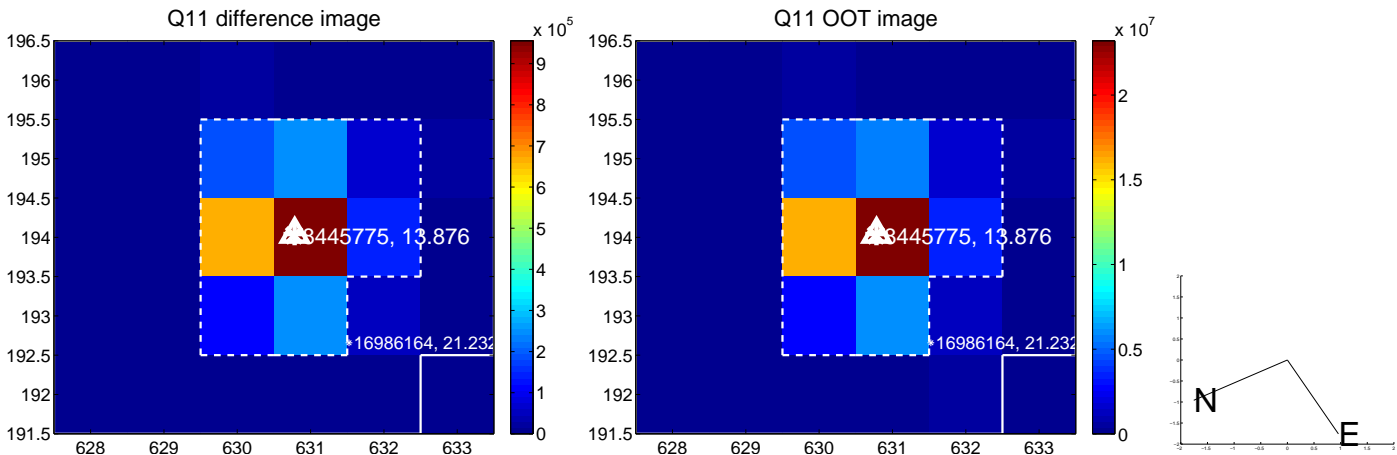
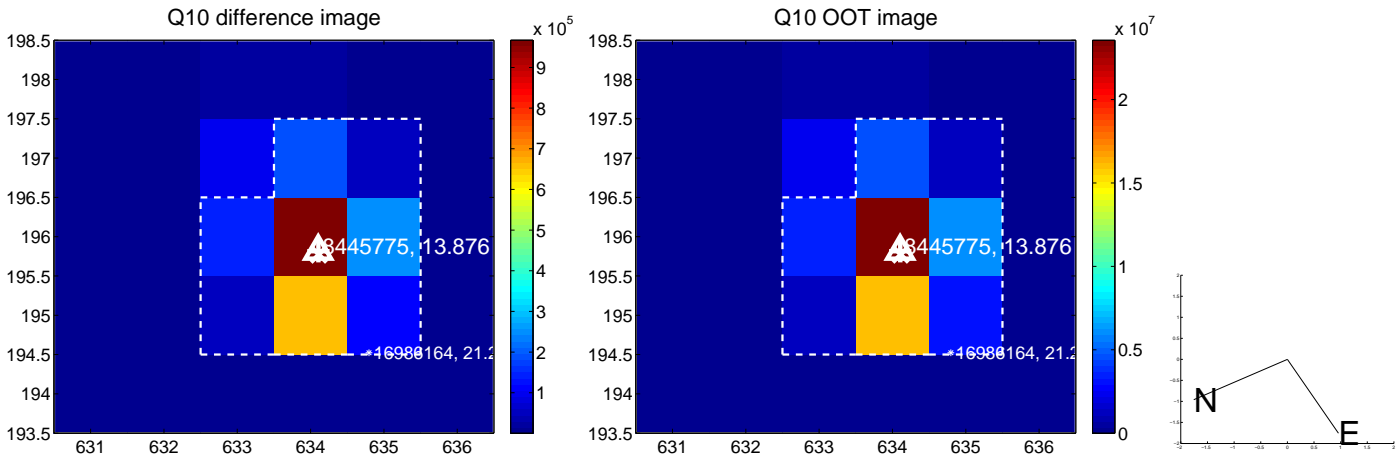
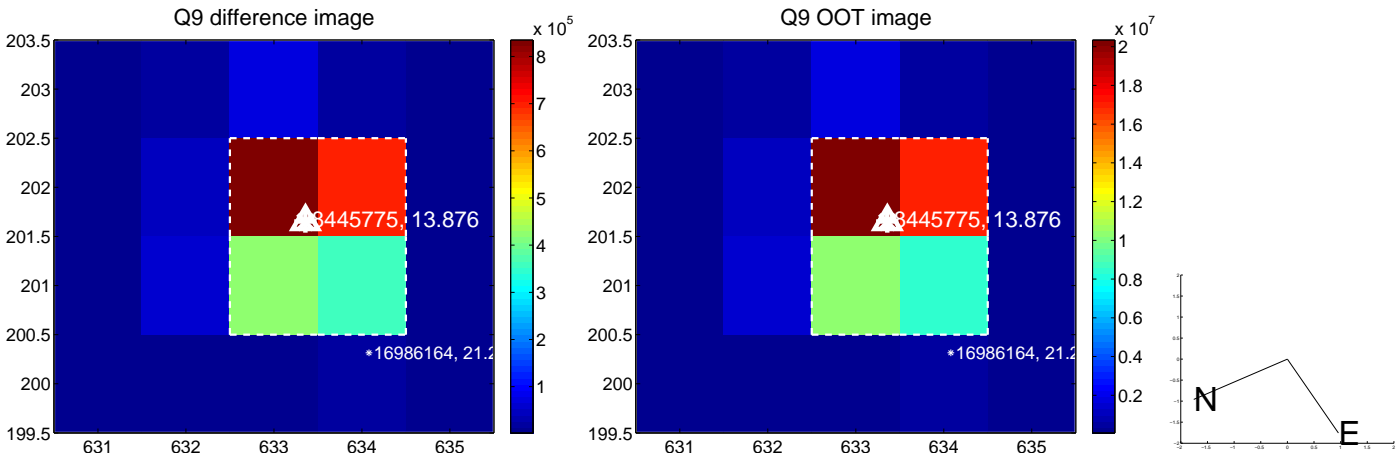
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



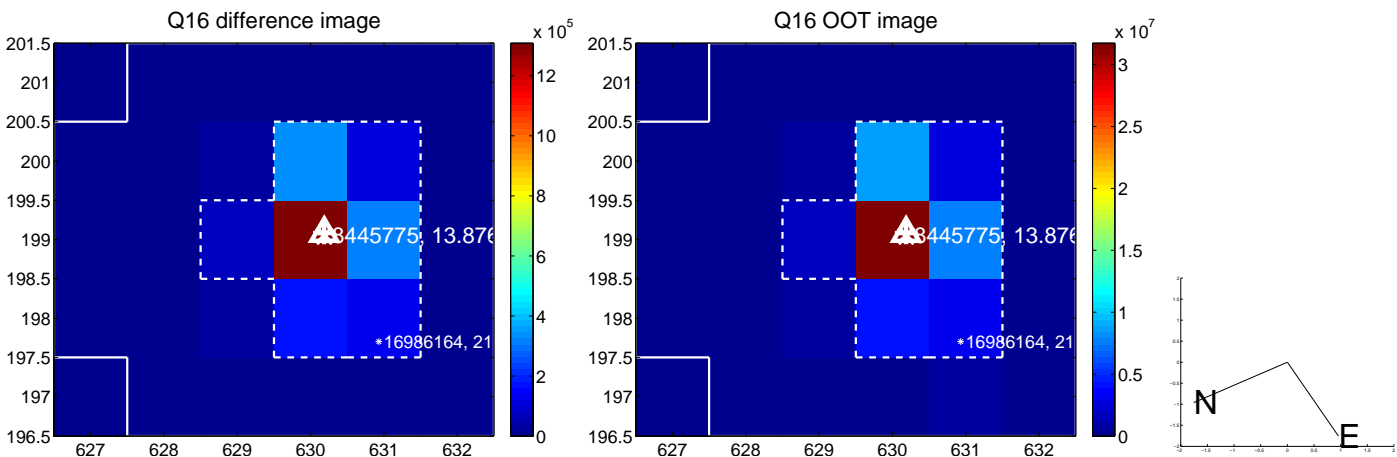
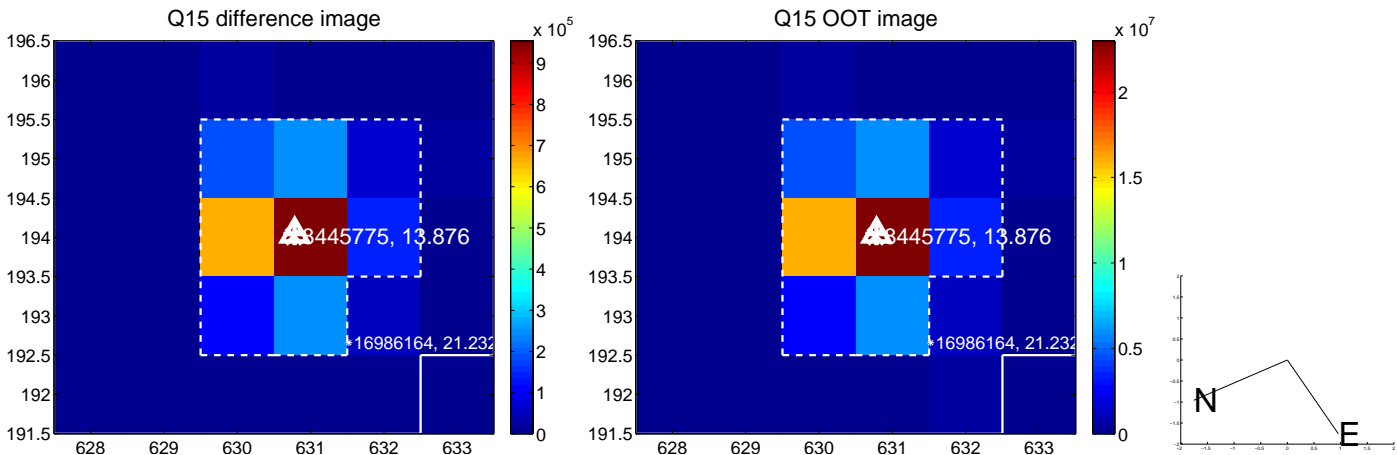
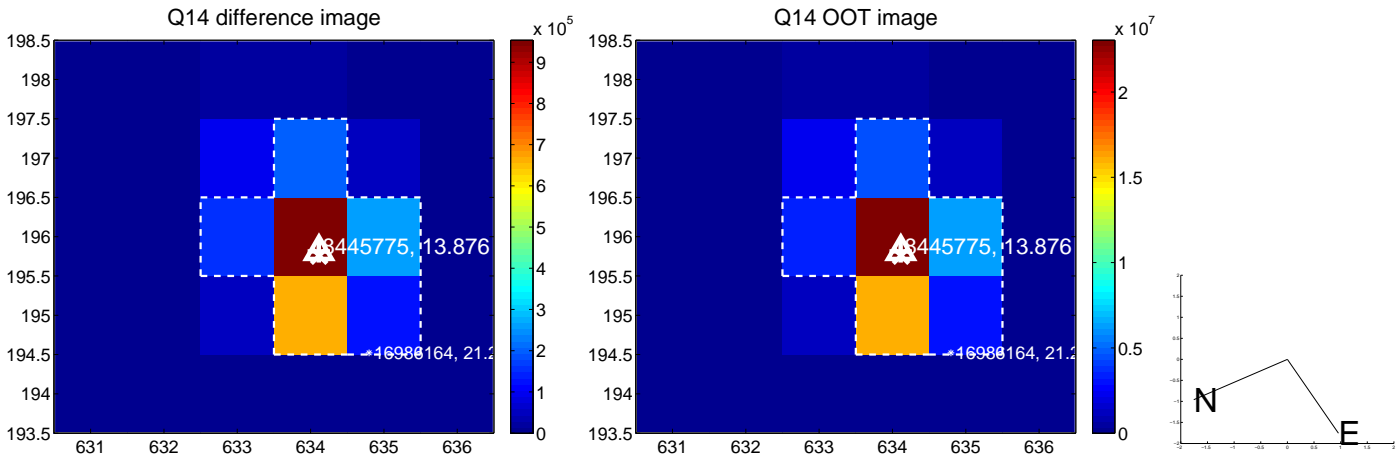
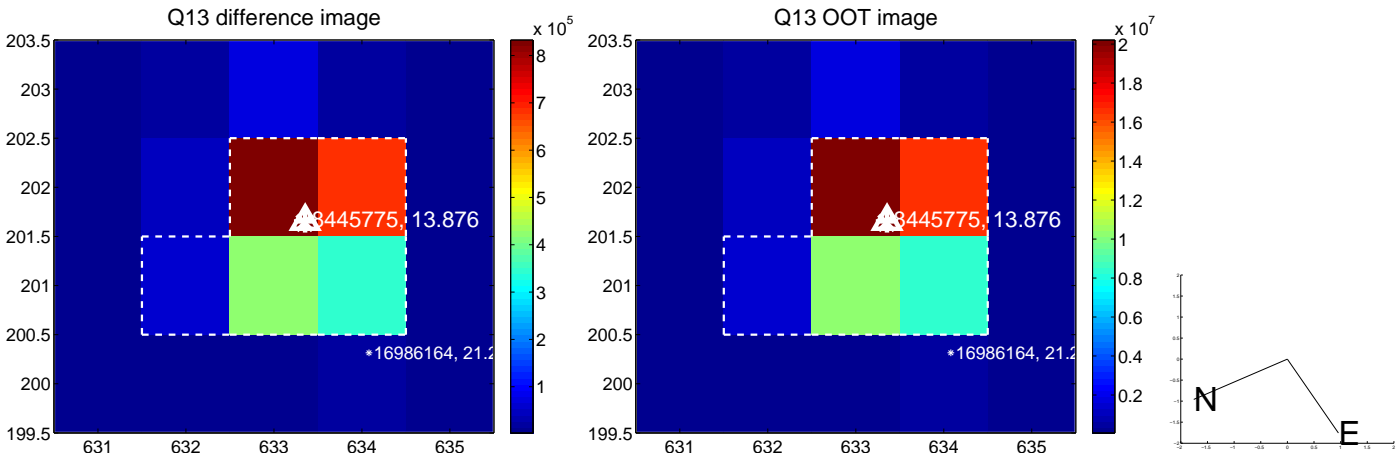
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



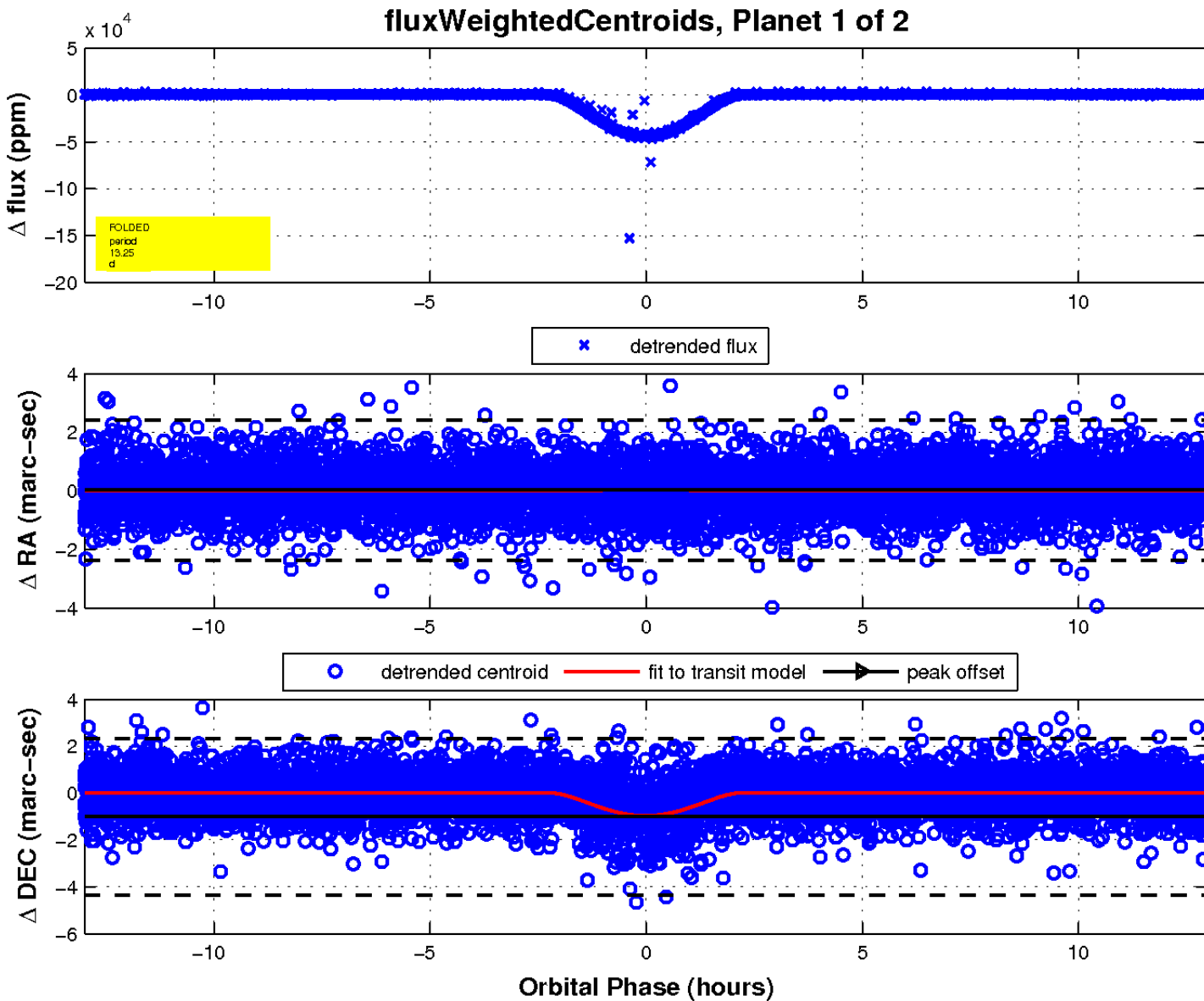
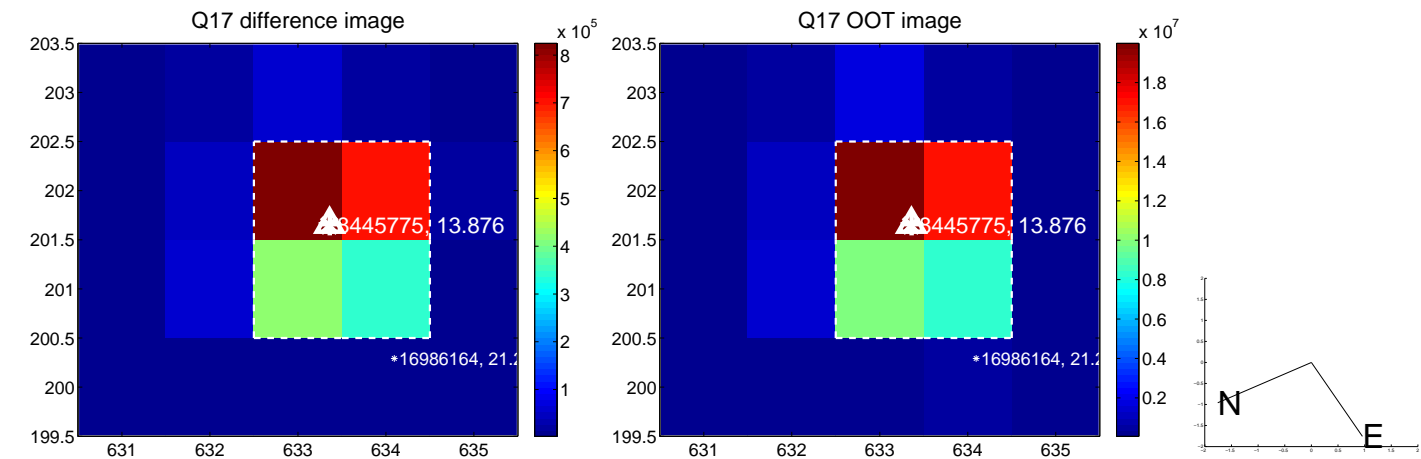
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

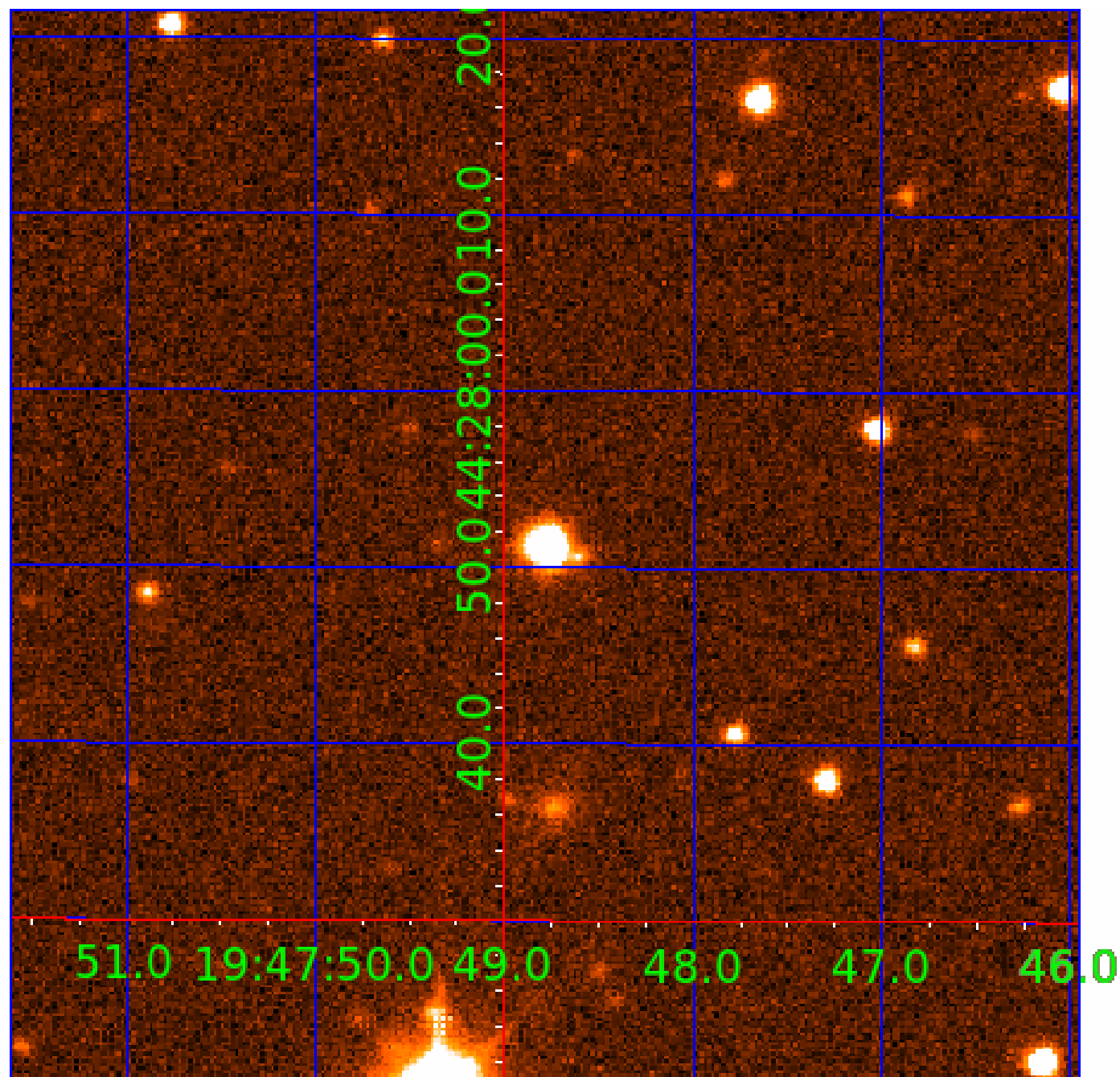


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008445775

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})
008445775-01	OBS	7042.01	13.254135	136.367832	44715.4	4.331	3634.9	3398.1	1.44	6175	48.49	227.90
008445775-02	OBS	No	13.253768	136.477512	621.2	43.324	13.4	21.7	1.44	6175	6.88	227.91

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008445775-01	OBS	FP	0.00	0	1	0	0	DEEP_V_SHAPED
008445775-02	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—RESIDUAL_TCE

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 008445775-02

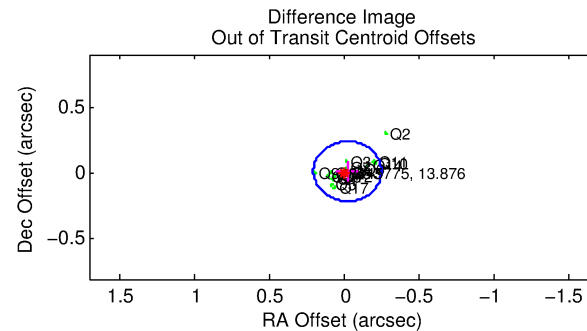
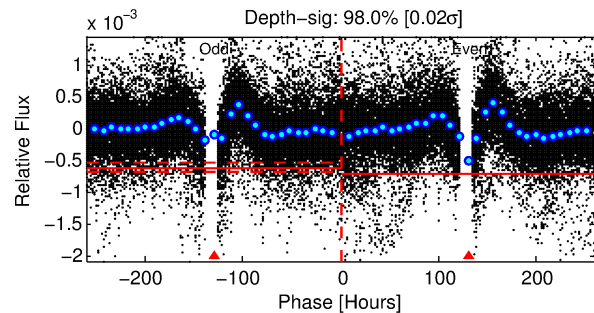
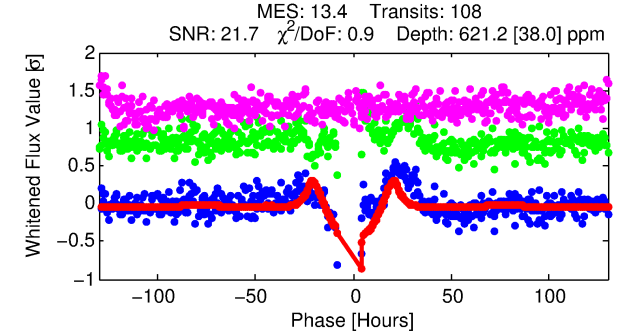
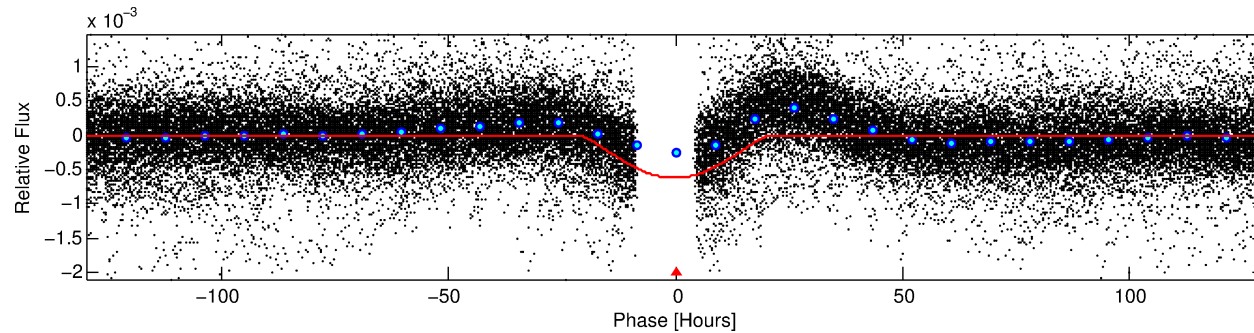
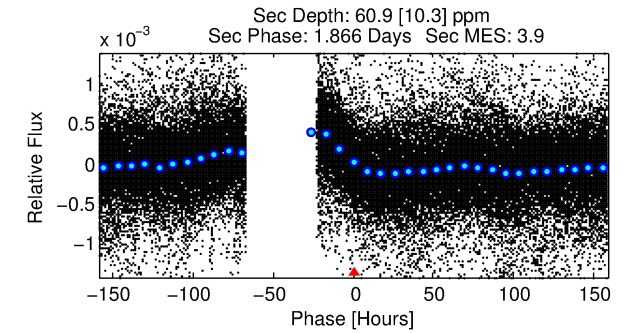
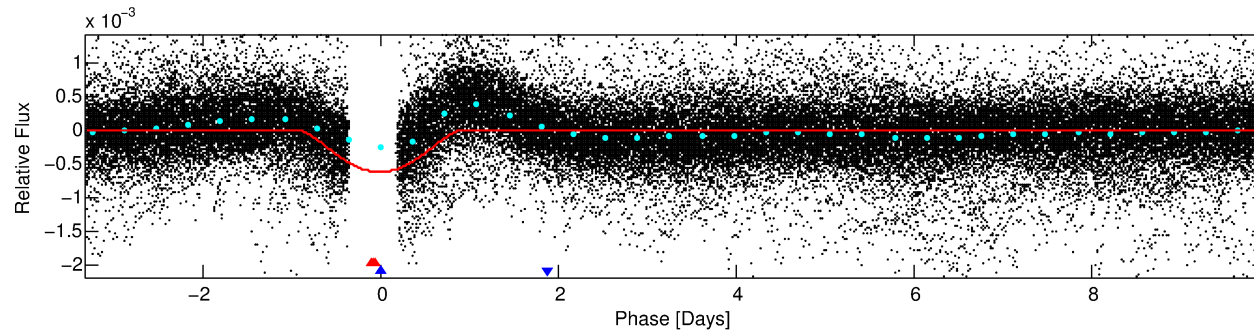
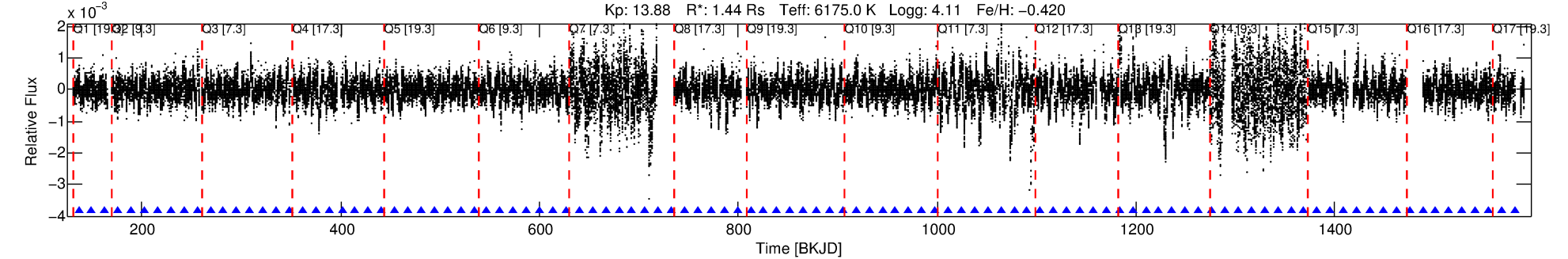
No Significant Match Found

DV One-Page Summary

KIC: 8445775 Candidate: 2 of 2 Period: 13.254 d

KOI: K07042 Corr: No Ephemeris Match

Kp: 13.88 R*: 1.44 Rs Teff: 6175.0 K Logg: 4.11 Fe/H: -0.420



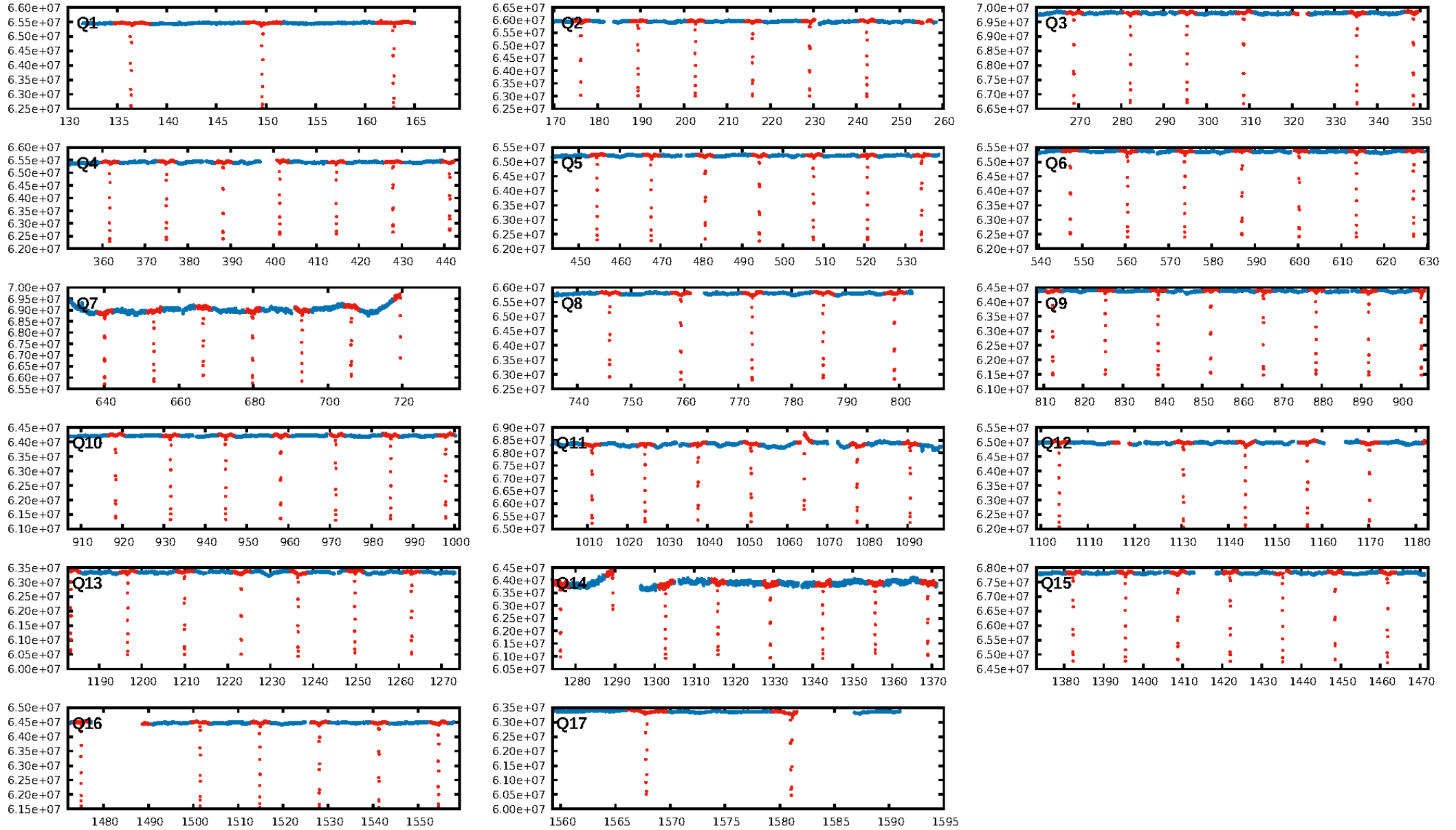
DV Fit Results:

Period = 13.25377 [0.00028] d
Epoch = 136.4775 [0.0167] BKJD
Rp/R* = 0.0439 [0.0187]
a/R* = 1.23 [0.02]
b = 1.00 [0.03]
Seff = 227.91 [126.33]
Teq = 991 [137] K
Rp = 6.89 [3.73] Re
a = 0.1086 [0.0359] AU
Ag = 8.33 [8.50] [0.86σ]
Teffp = 2602 [571] K [2.74σ]

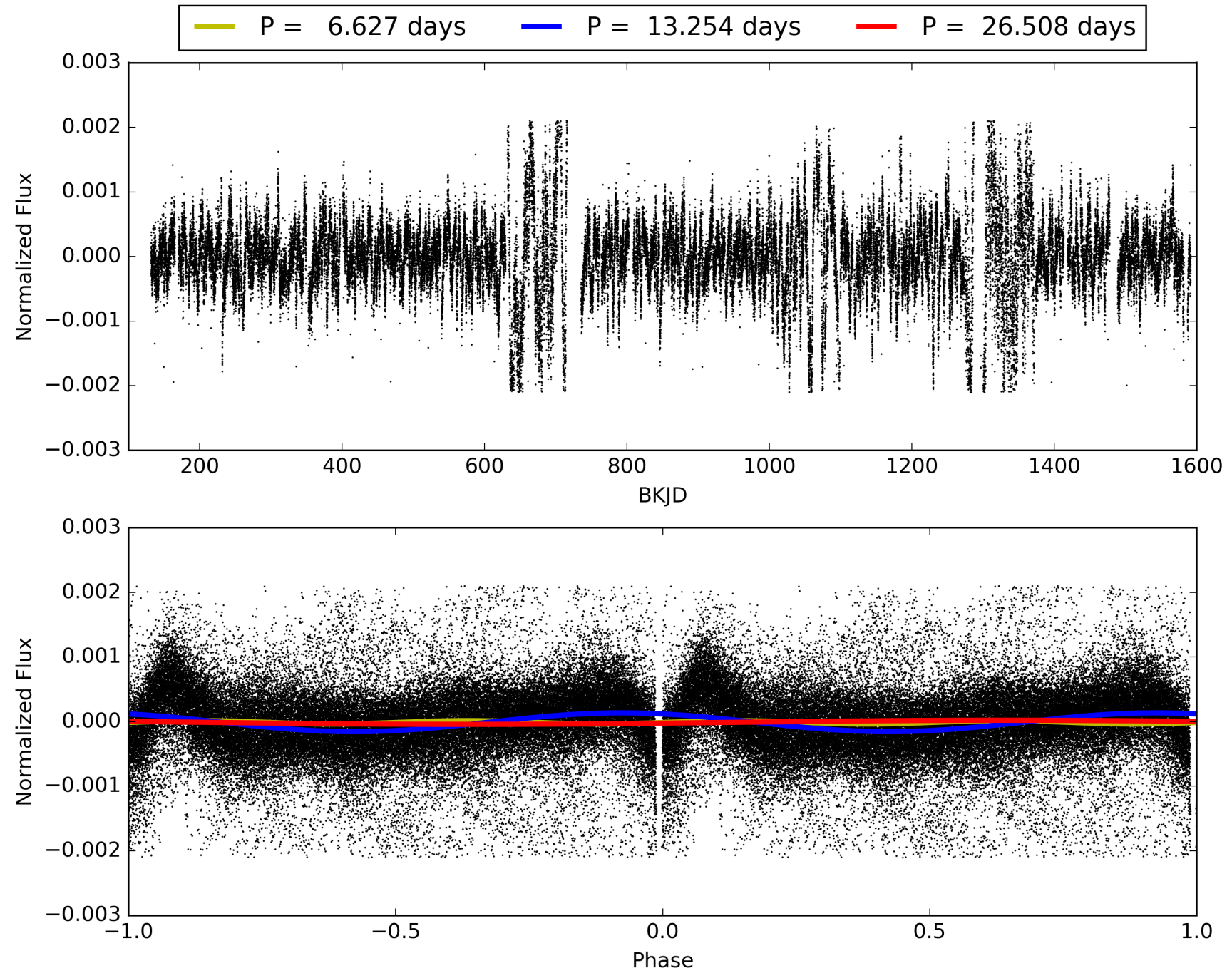
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: 55.2%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.01e-42
RollingBand-fgt: 1.00 [103/103]
GhostDiagnostic-chr: 1.829
Centroid-sig: 5.9%
Centroid-so: 0.119 arcsec [1.56σ]
OotOffset-rm: 0.030 arcsec [0.40σ]
KicOffset-rm: 0.139 arcsec [1.70σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 1.00 [17/17]
DiffImageOverlap-fno: 0.00 [0/17]

TCE 008445775-02, PDC Light Curves

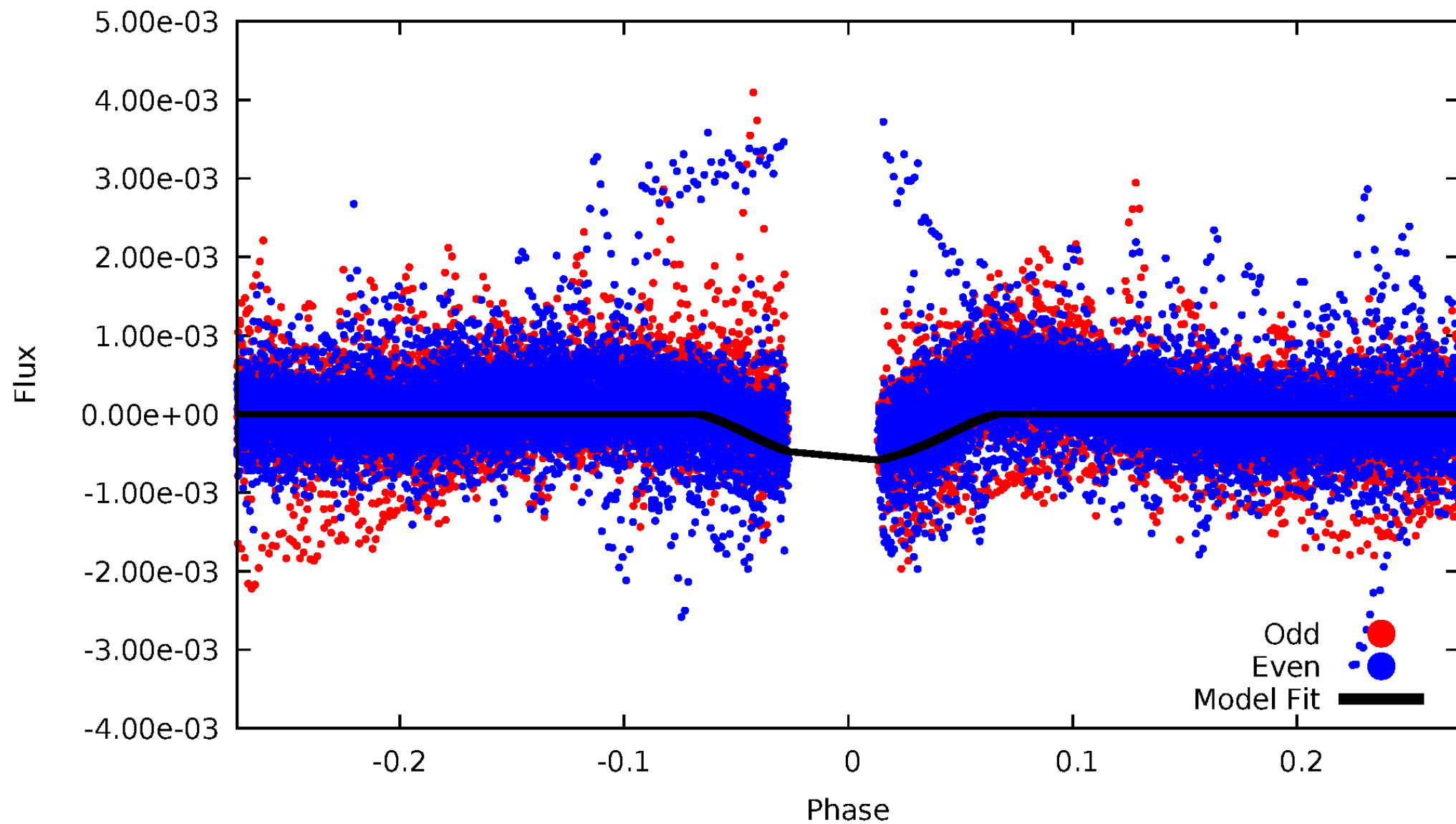


TCE 008445775-02



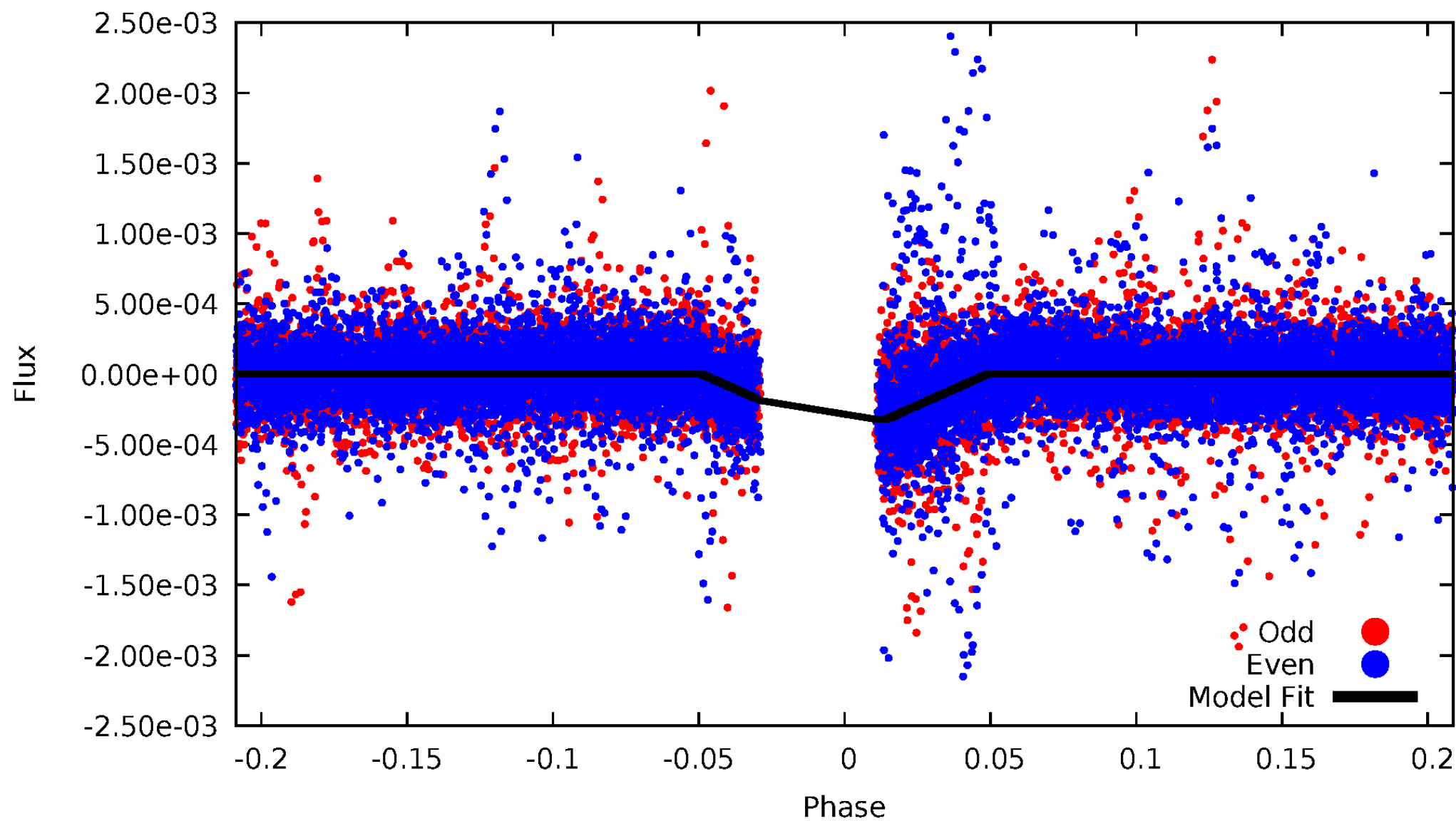
DV Odd/Even

TCE 008445775-02



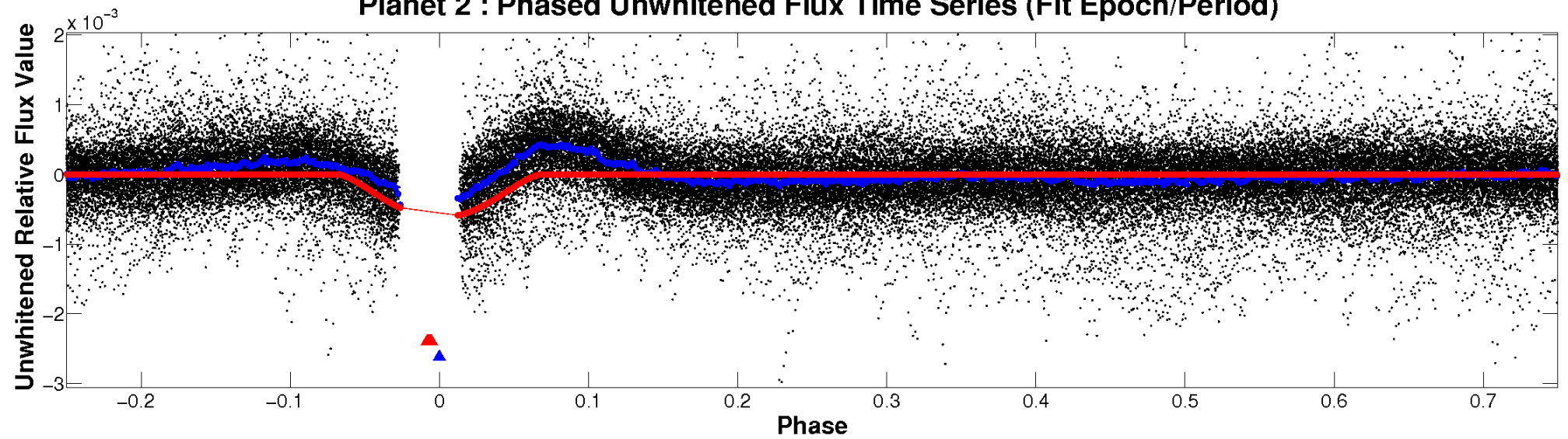
ALT Odd/Even

TCE 008445775-02

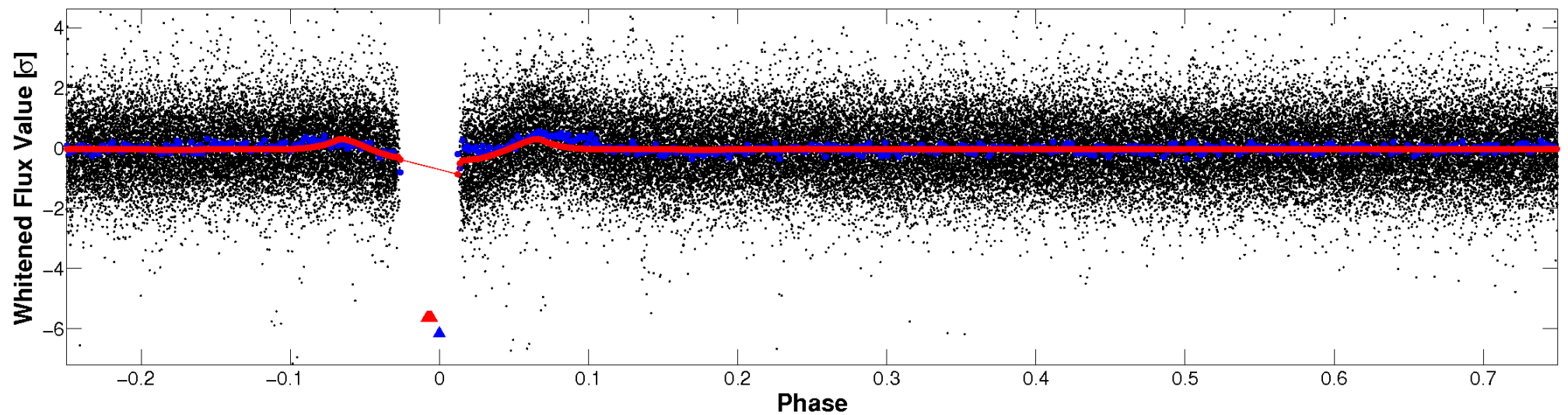


Non-Whitened Vs. Whitened Light Curve

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

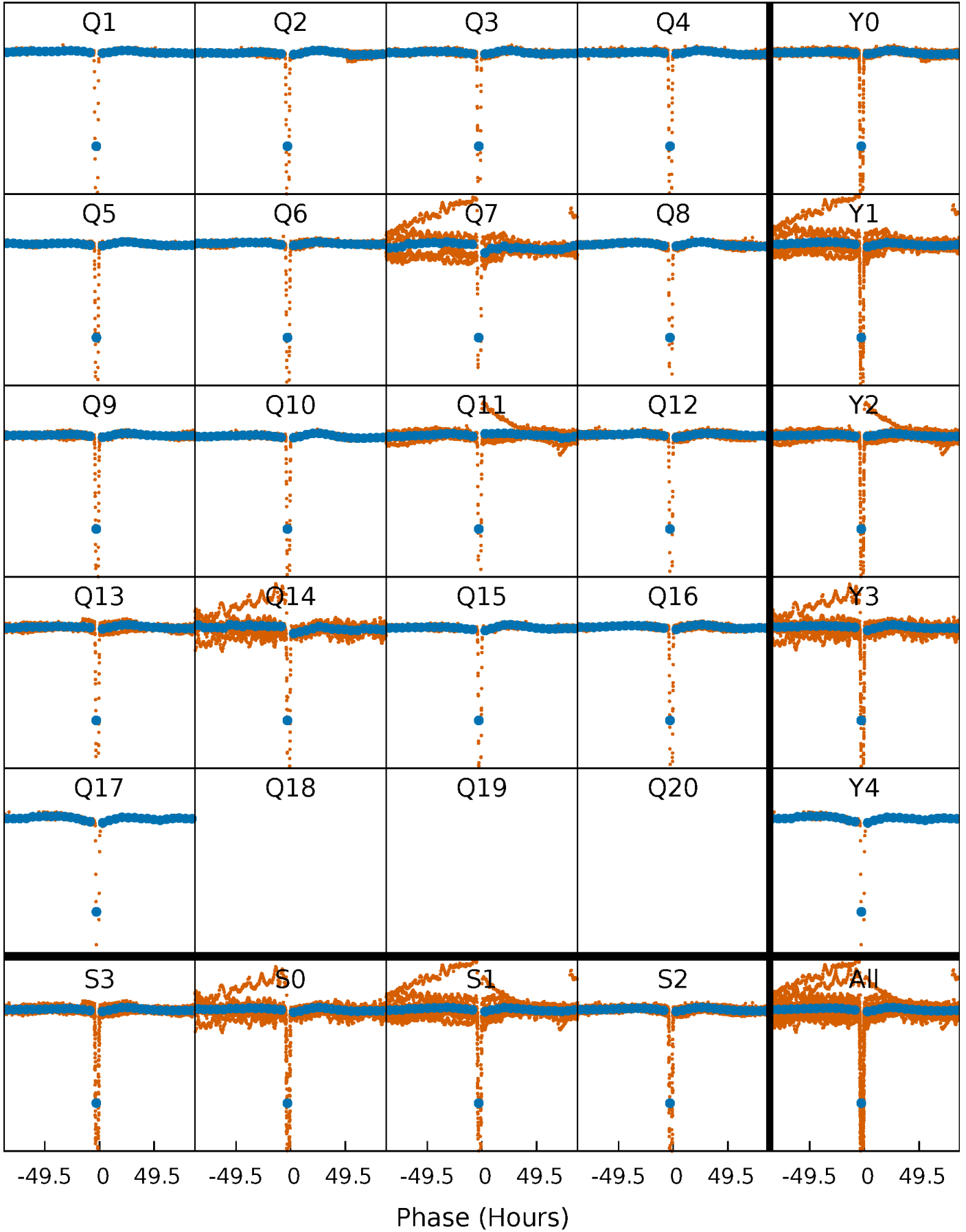


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



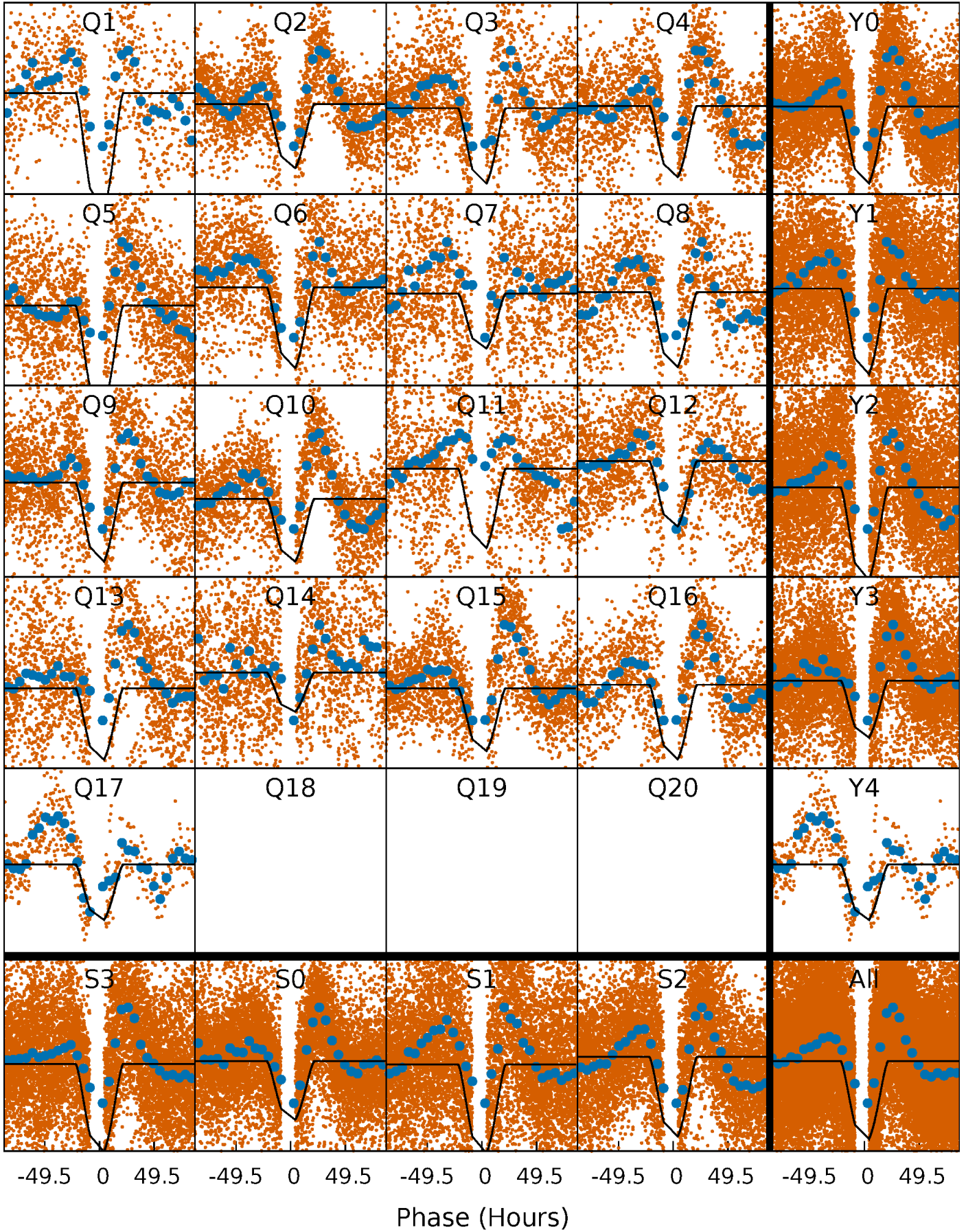
PDC Quarter-Phased Transit Curves

TCE 008445775-02 P= 13.253768 Days $T_0=136.477512$ (BKJD)



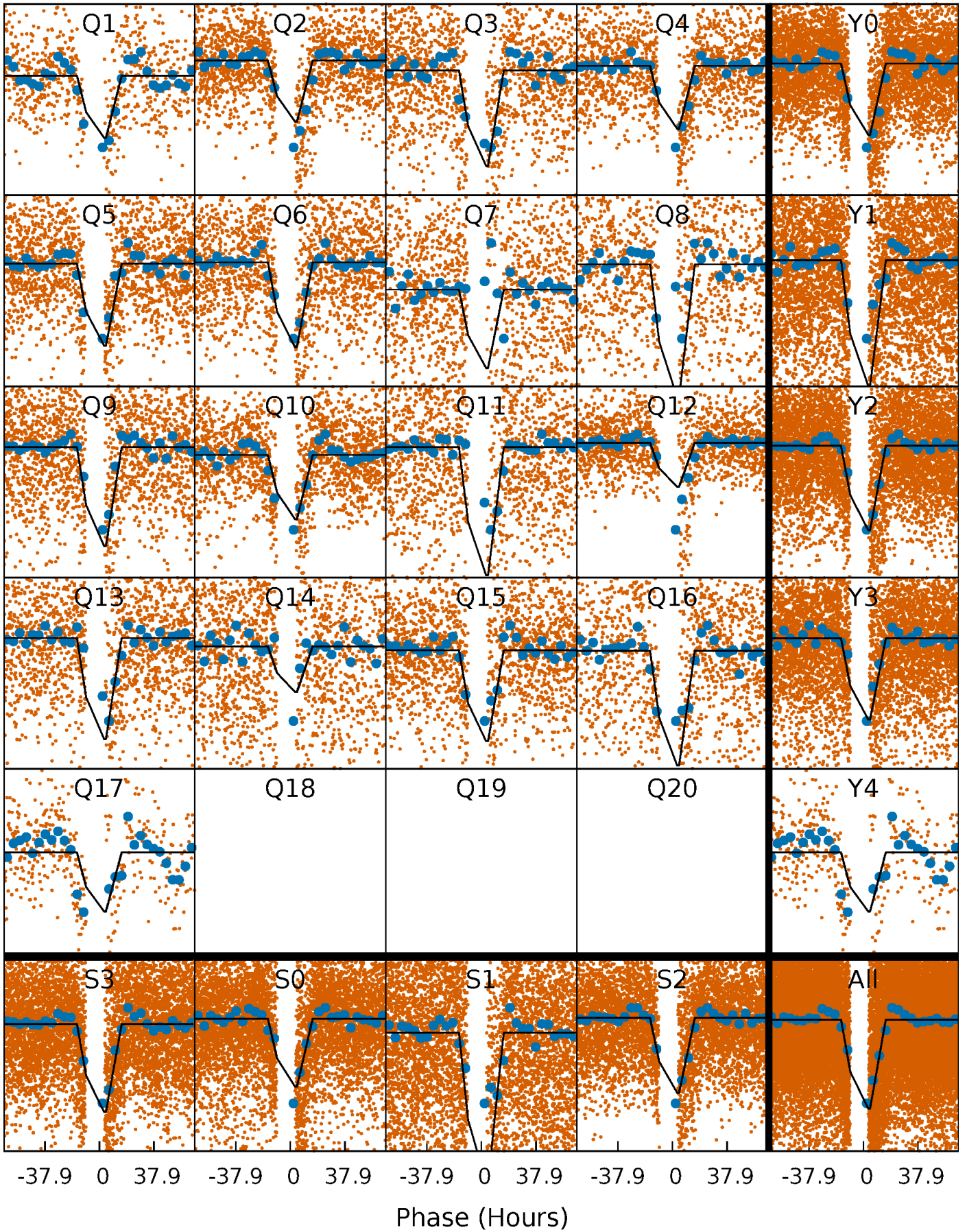
DV Quarter-Phased Transit Curves

TCE 008445775-02 P= 13.253768 Days $T_0=136.477512$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

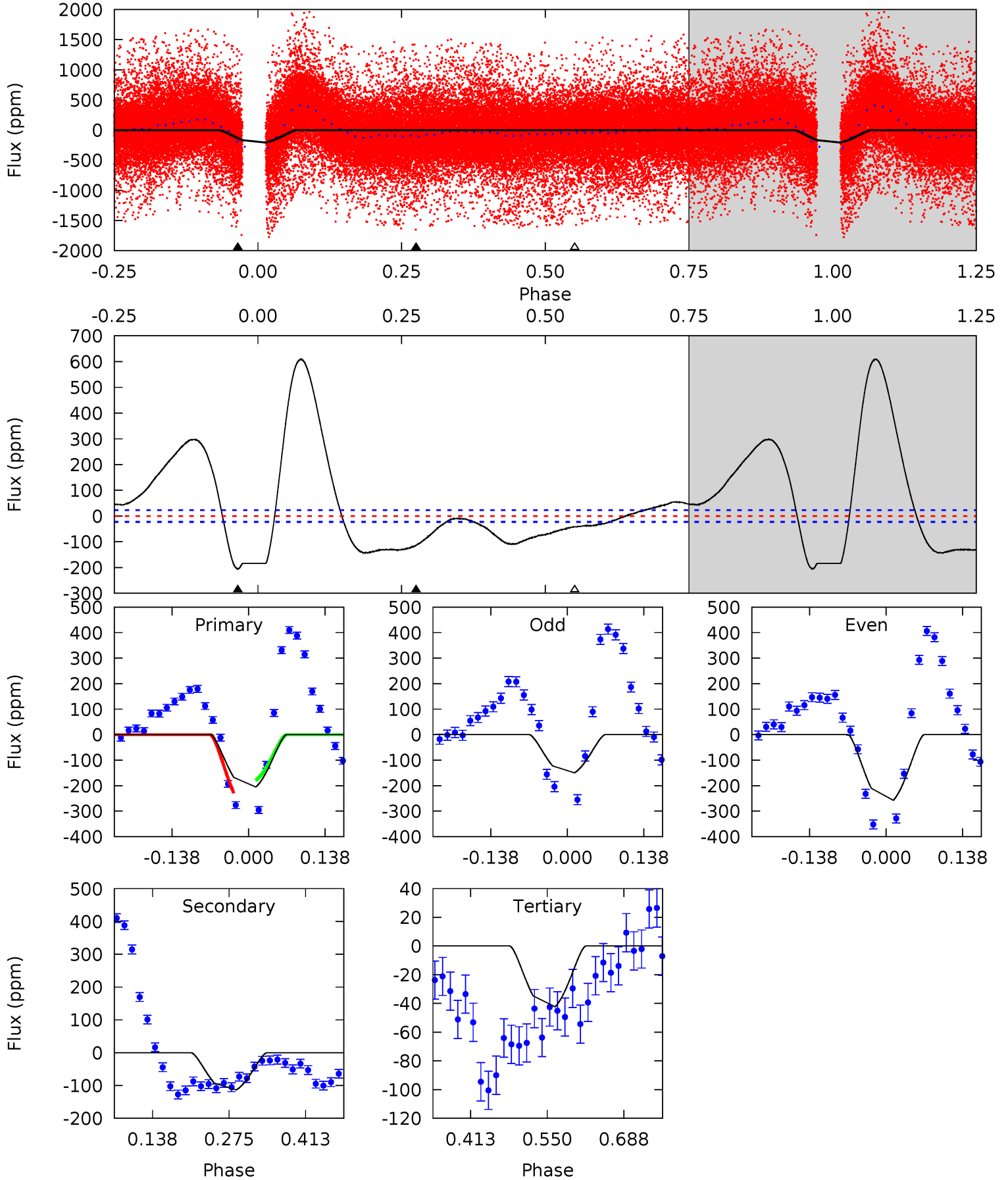
TCE 008445775-02 P= 13.253736 Days $T_0=136.509202$ (BKJD)



DV Model-Shift Uniqueness Test

008445775-02, P = 13.253768 Days, E = 123.223744 Days

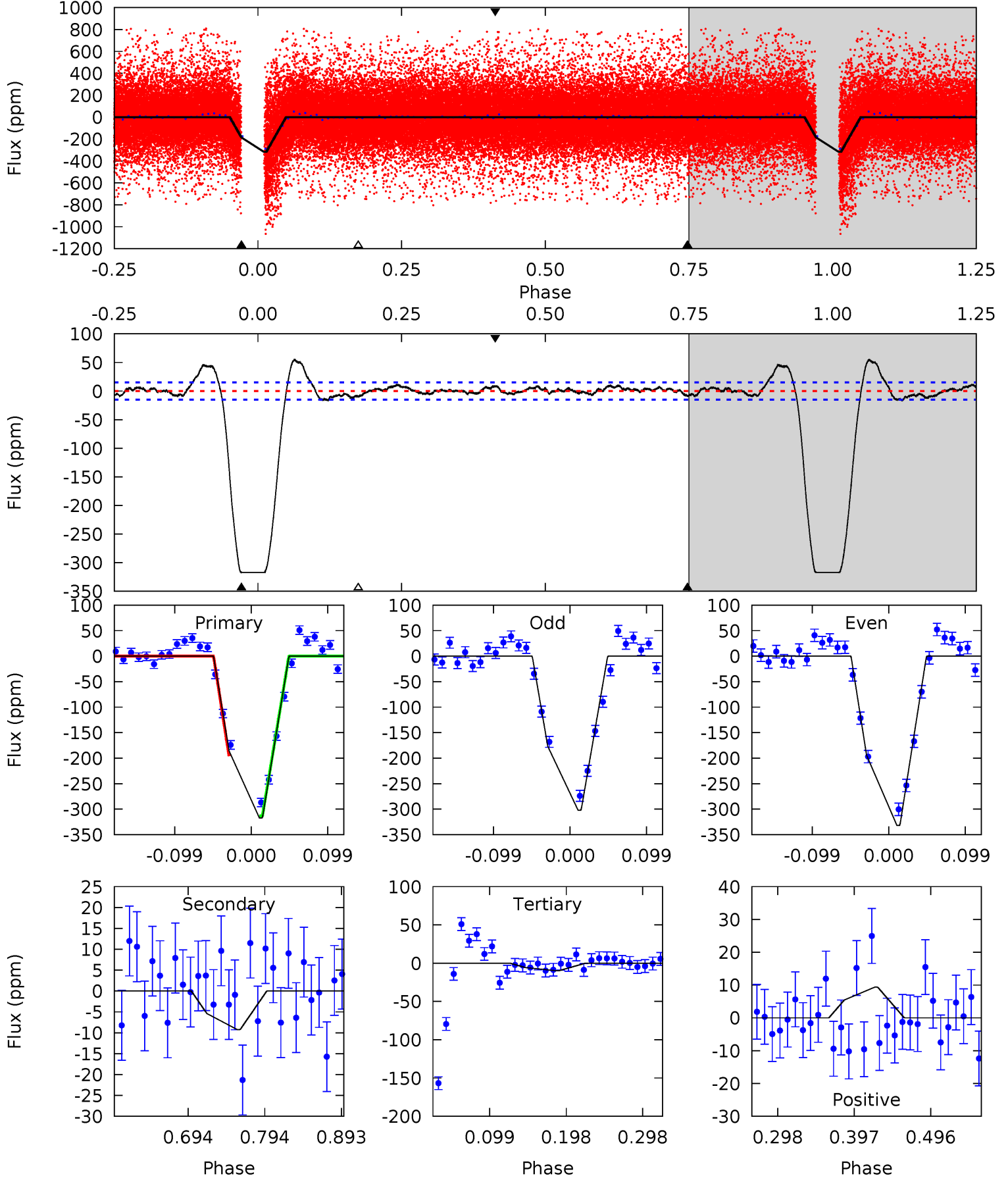
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
40.3	22.3	8.32	0	4.50	1.49	18.6	32.0	40.3	14.0	22.3	10.4	0.40	0.75	4.84



Alt Model-Shift Uniqueness Test

008445775-02, P = 13.253736 Days, E = 123.255466 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
96.1	2.80	2.99	2.83	4.57	1.65	2.73	93.1	93.3	-0.20	-0.04	4.53	1.03	0.15	17.1



Stellar Parameters For KIC 008445775

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6175^{+188}_{-206}	$4.111^{+0.319}_{-0.147}$	$-0.420^{+0.300}_{-0.300}$	$1.436^{+0.393}_{-0.480}$	$0.970^{+0.147}_{-0.120}$	$0.462^{+0.996}_{-0.215}$
	+3%/-3%	+8%/-4%	+71%/-71%	+27%/-33%	+15%/-12%	+216%/-47%
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 008445775-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-114 ± 5	$6.59^{+3.09}_{-2.83}$	1364^{+101}_{-127}	3491^{+700}_{-342}	17^{+35}_{-9}
Alt.	-9 ± 3	$3.20^{+2.54}_{-2.00}$	1362^{+106}_{-128}	2940^{+1115}_{-491}	$5.533^{+35.984}_{-4.049}$

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 $A_{obs} \gg 1.0$

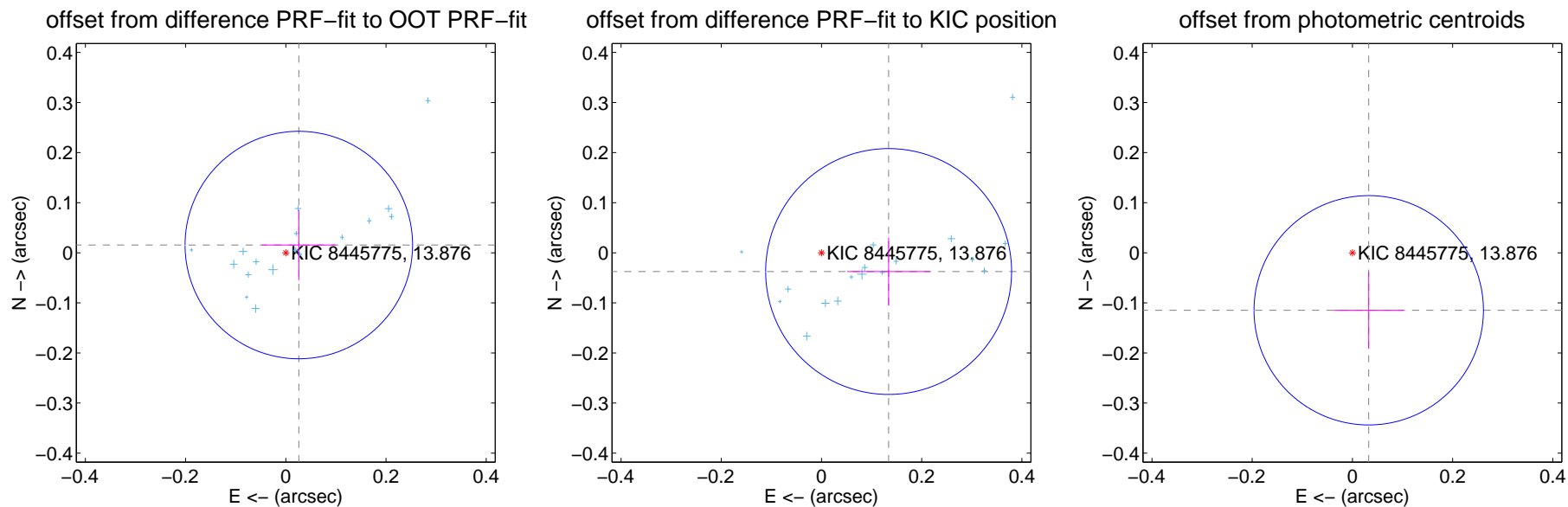
DV Centroid Data

Supplemental centroid analysis for 008445775-02. Kepler magnitude: 13.88. Transit SNR 21.74

There are 17 quarters with good PRF difference image offsets

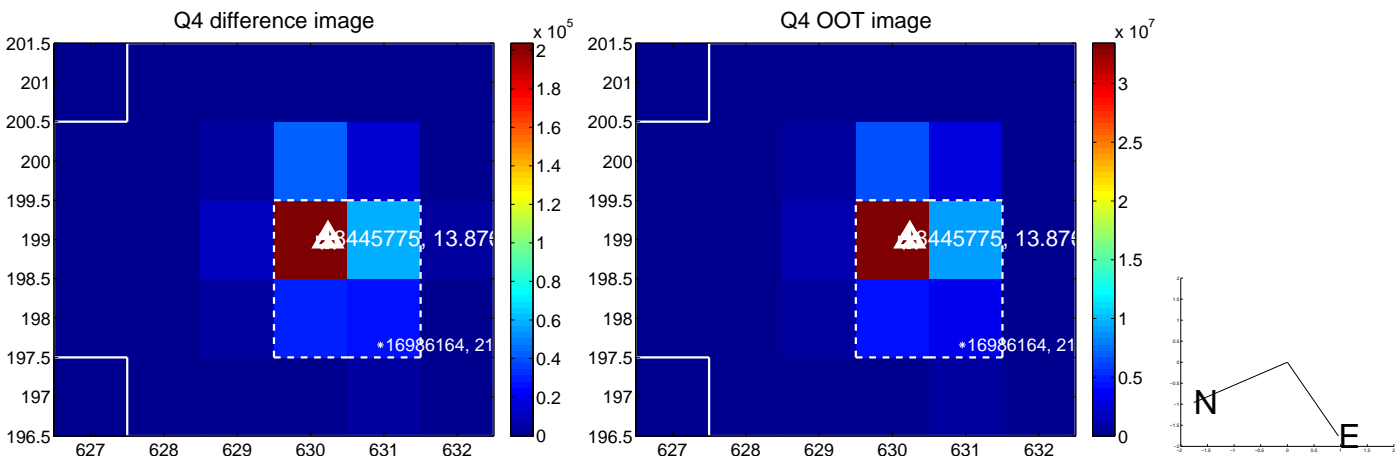
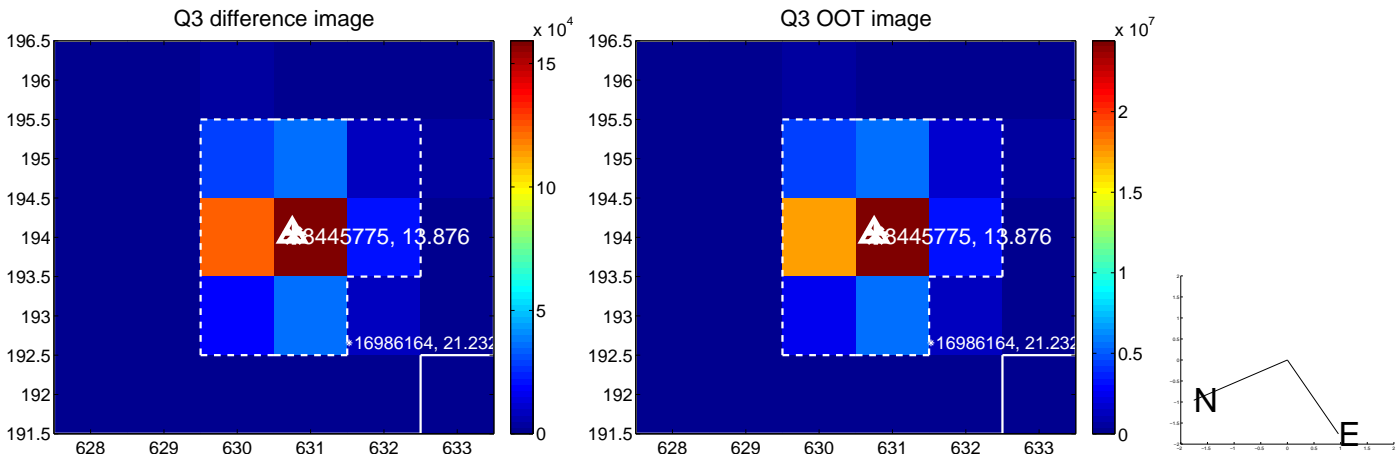
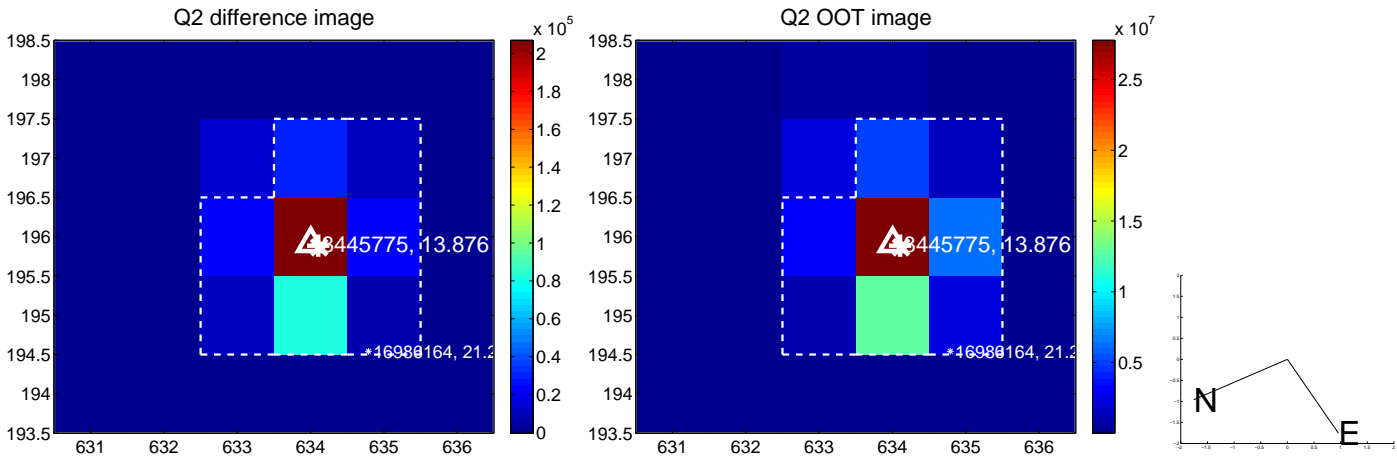
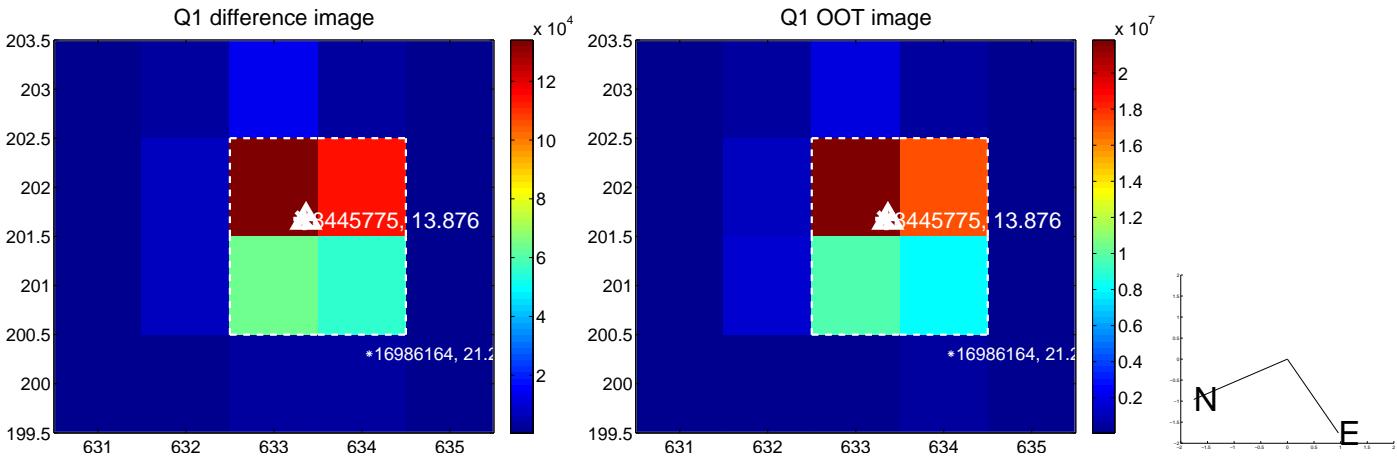
The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.030 ± 0.076	0.40	-0.026 ± 0.073	0.015 ± 0.070
PRF-fit source offset from KIC position	0.139 ± 0.082	1.70	-0.134 ± 0.083	-0.037 ± 0.068
photometric centroid source offset	0.12 ± 0.08	1.56	-0.03 ± 0.07	-0.11 ± 0.08

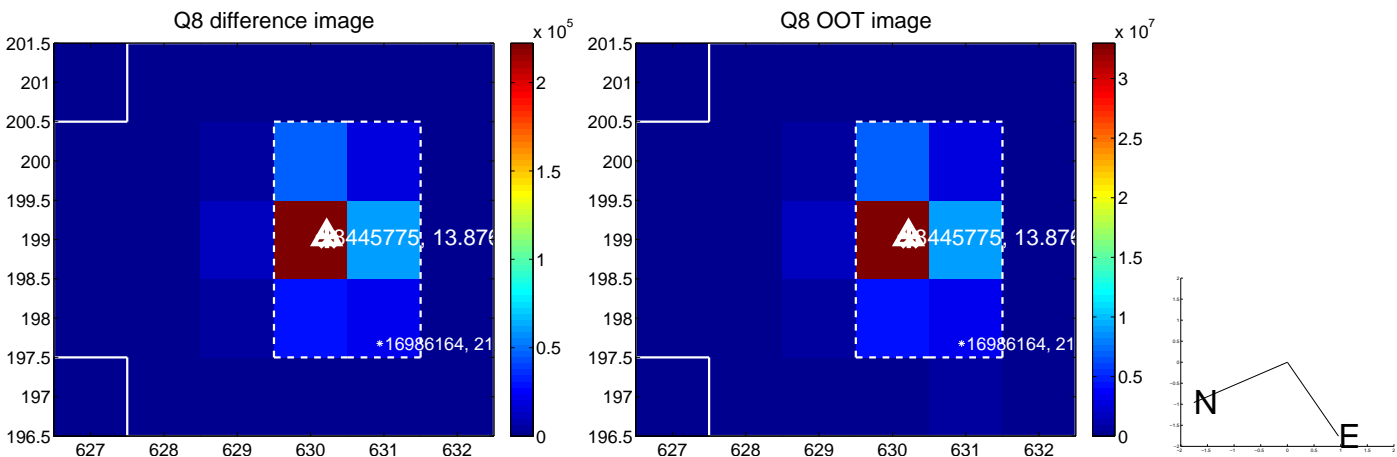
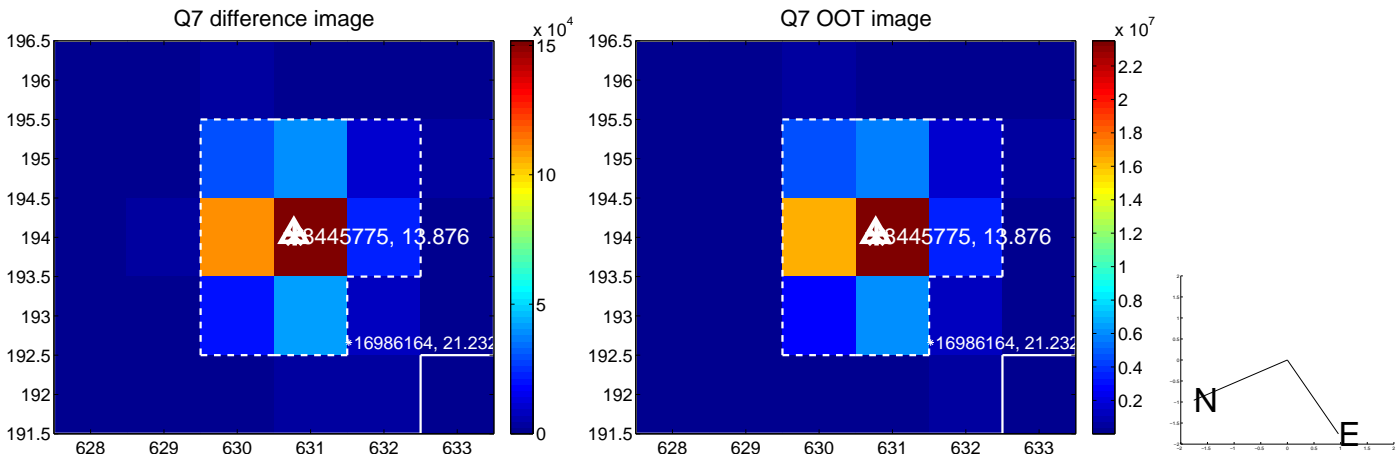
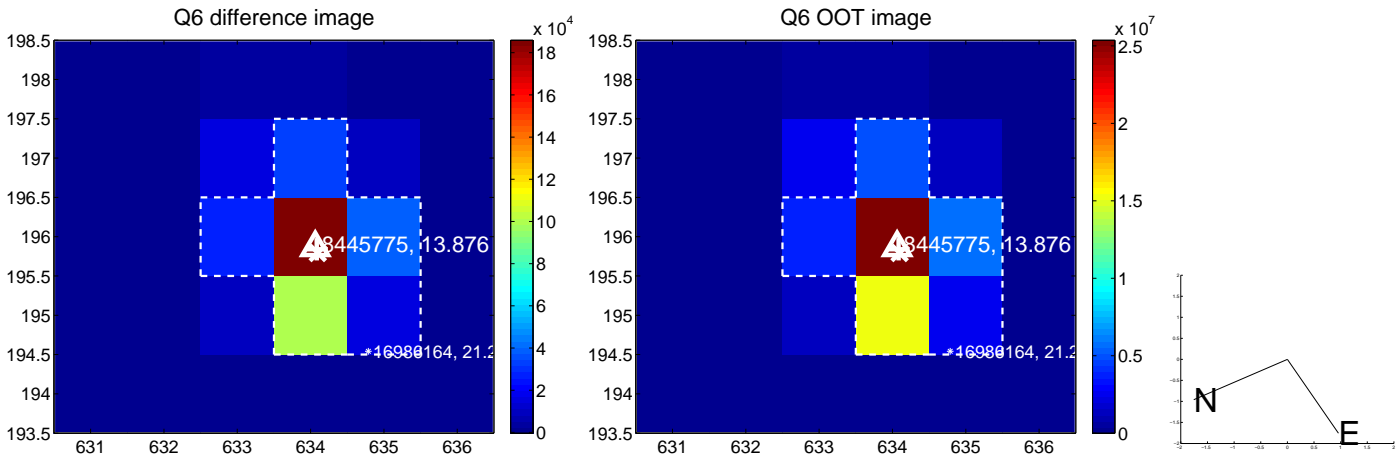
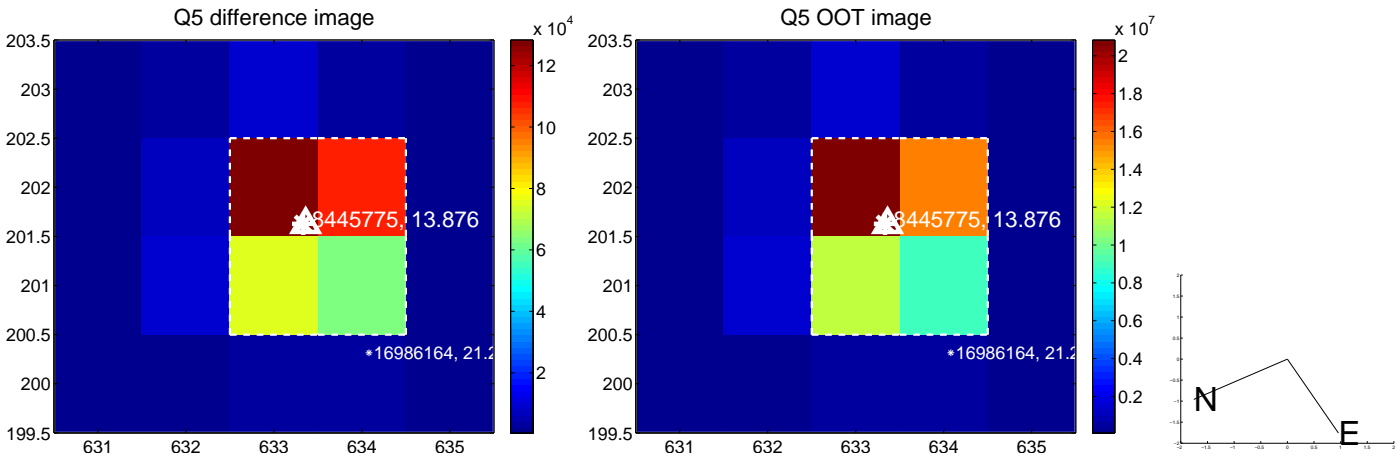


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

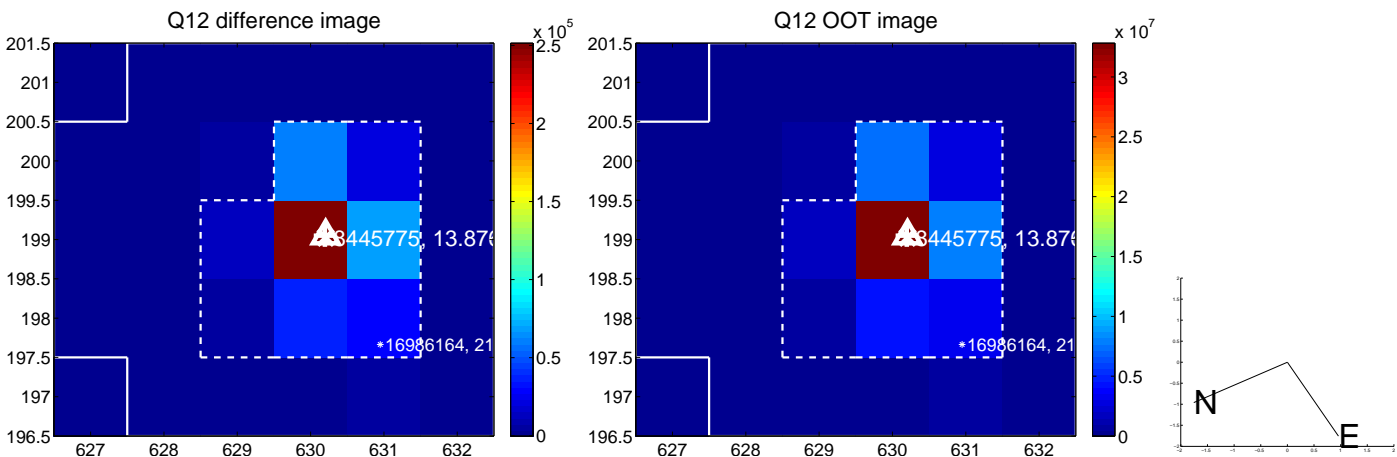
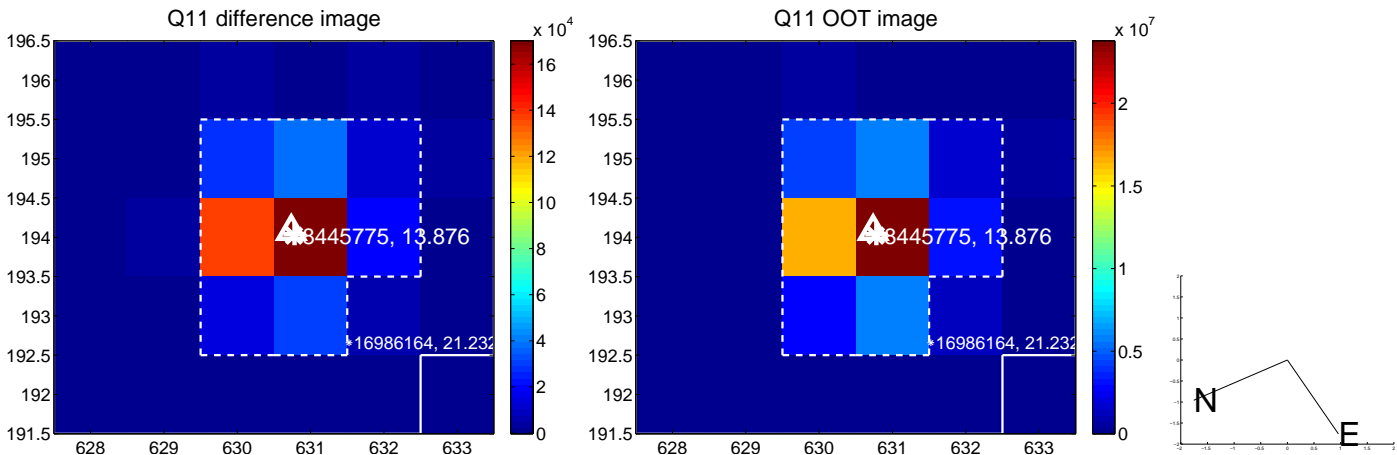
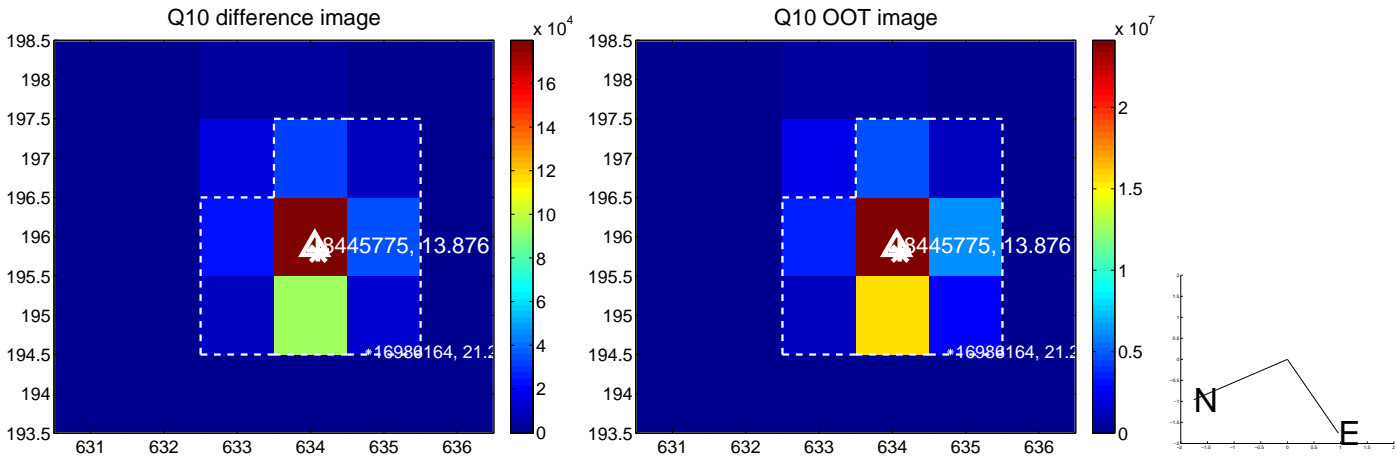
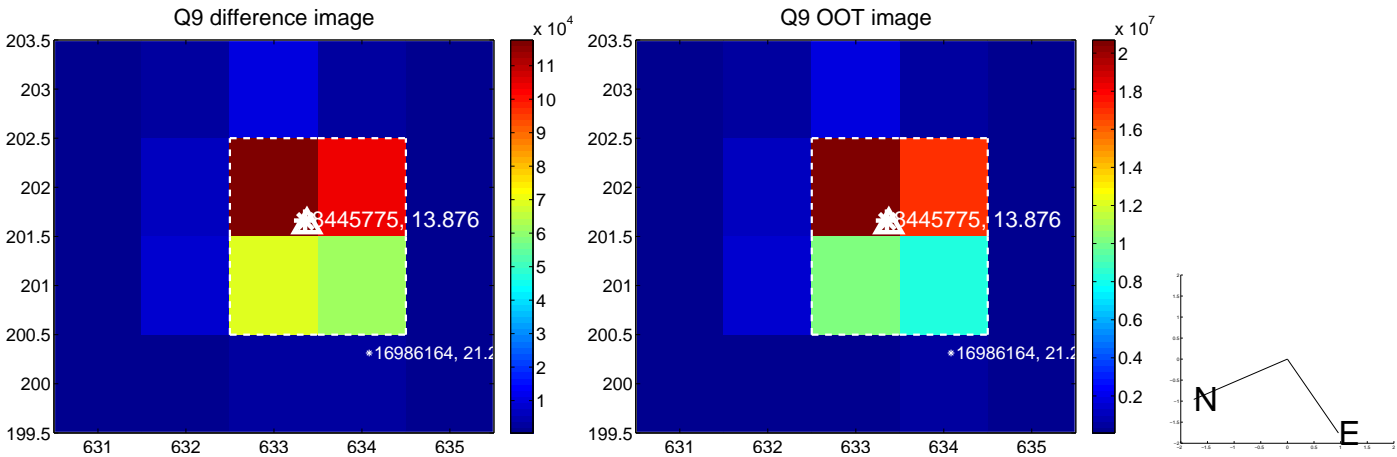
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



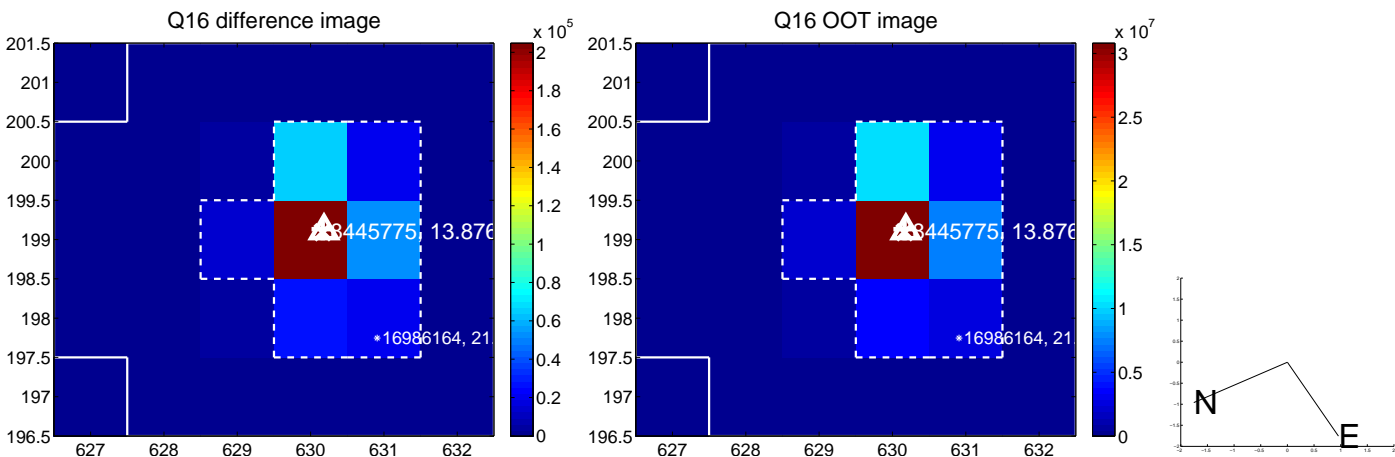
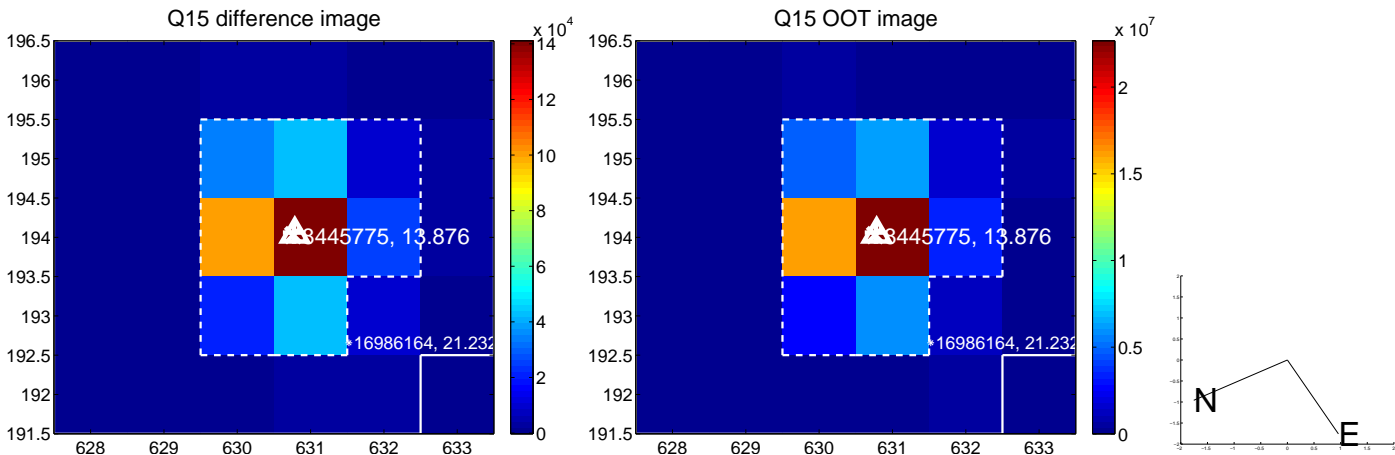
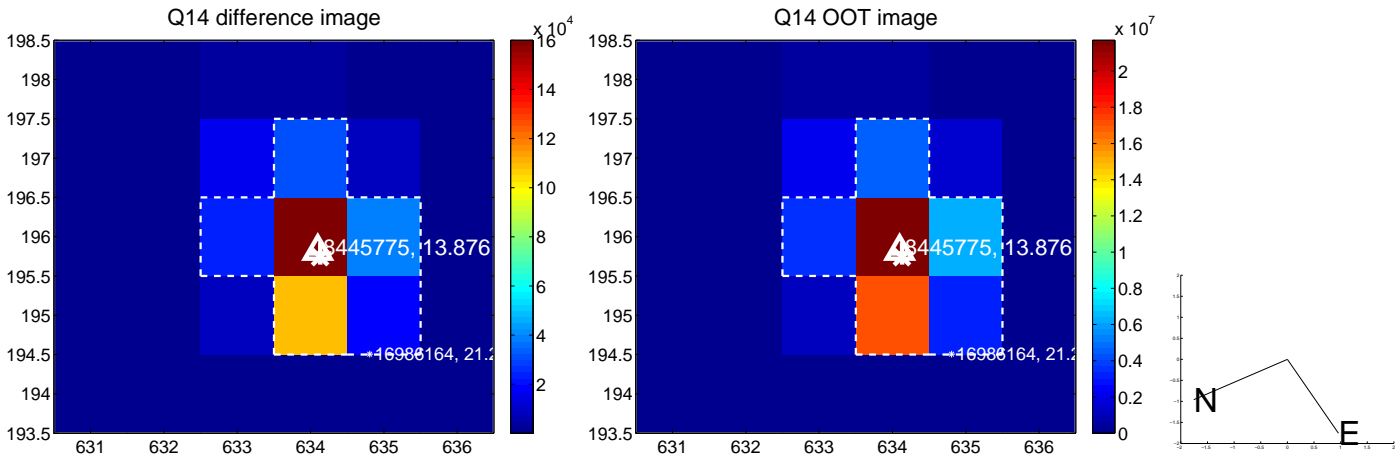
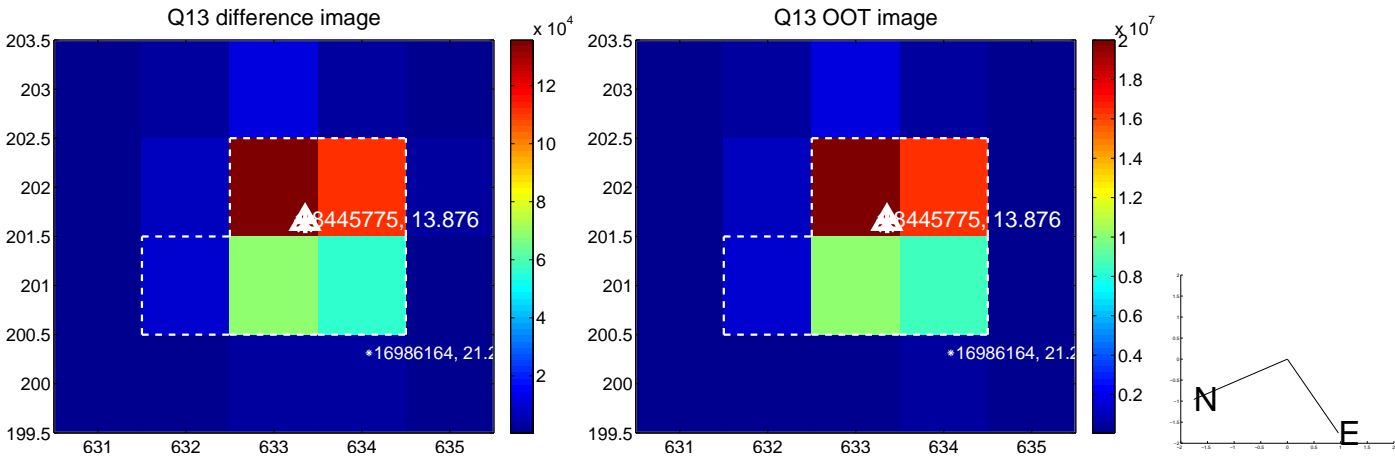
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



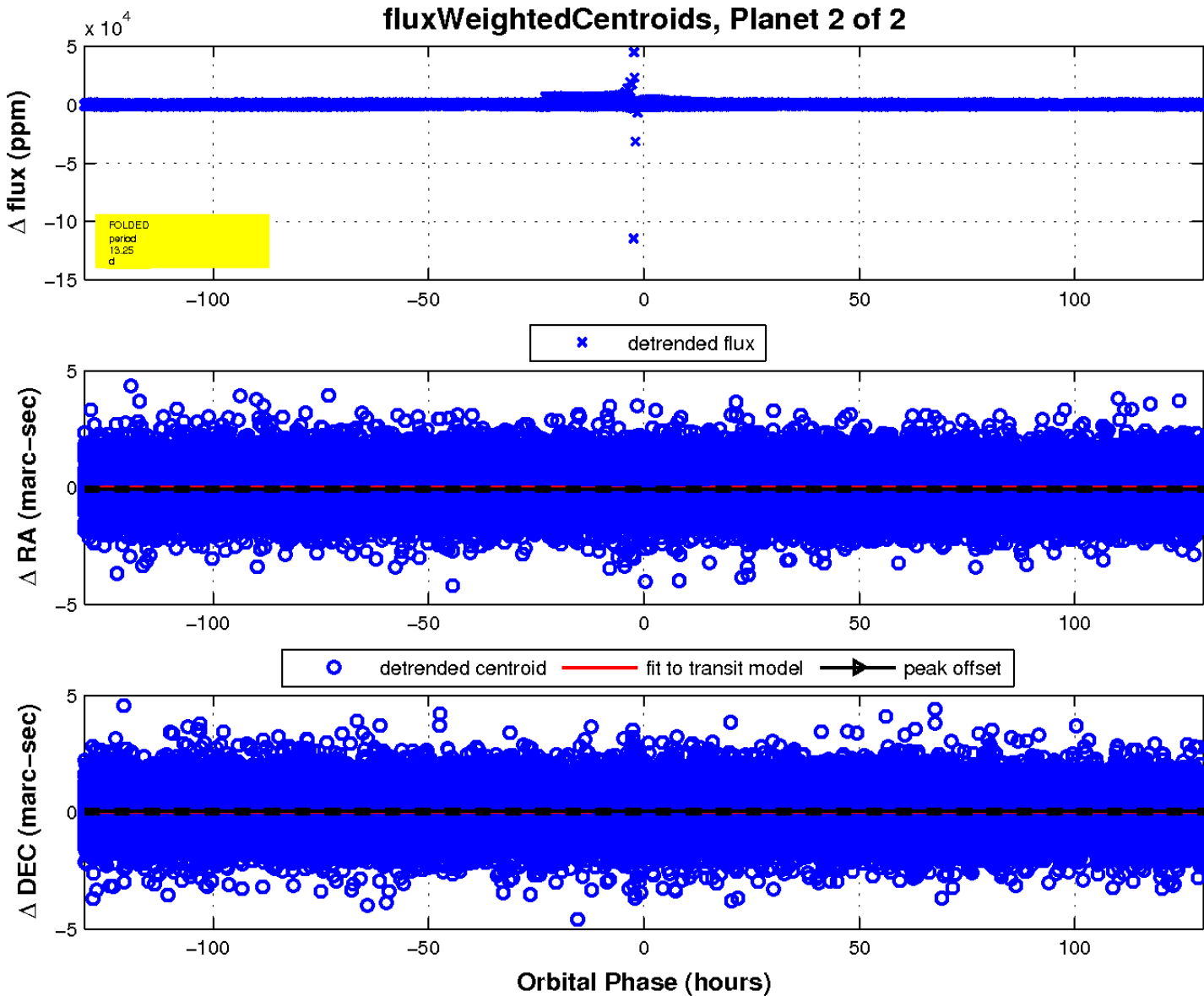
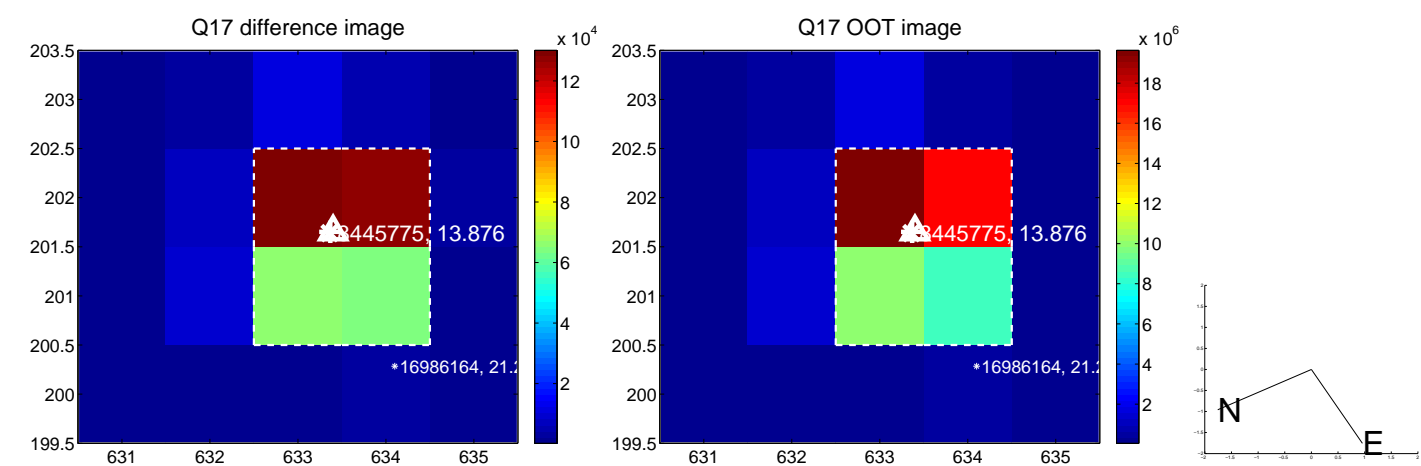
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

