

KIC 008094140

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})
008094140-01	OBS	6961.01	0.706428	132.145977	333388.0	1.621	4041.6	2178.8	0.74	4429	47.55	953.41
008094140-02	OBS	No	0.706425	131.792244	47921.6	1.500	838.1	-1.0	0.74	4429	15.50	953.41

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008094140-01	OBS	FP	0.00	0	1	0	0	SWEET_EB—MOD_SEC_DV—MOD_SEC_ALT—DEEP_V_SHAPED—HAS_SEC_TCE—CENT_KIC_POS
008094140-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE—CENT_NOFITS

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.

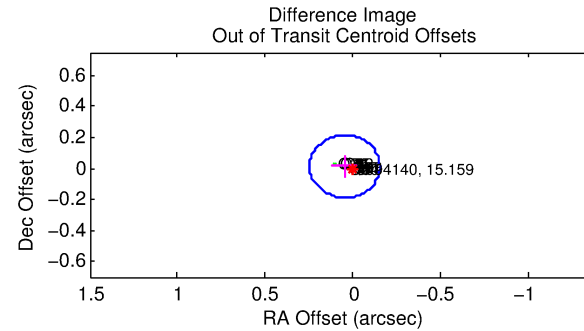
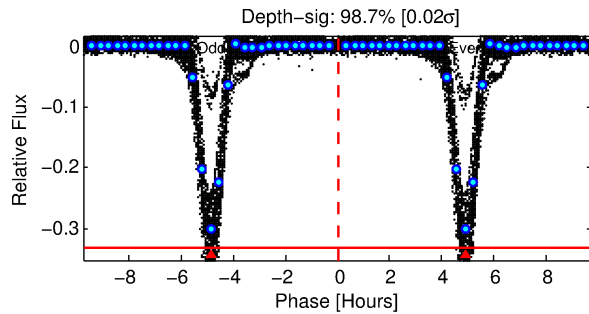
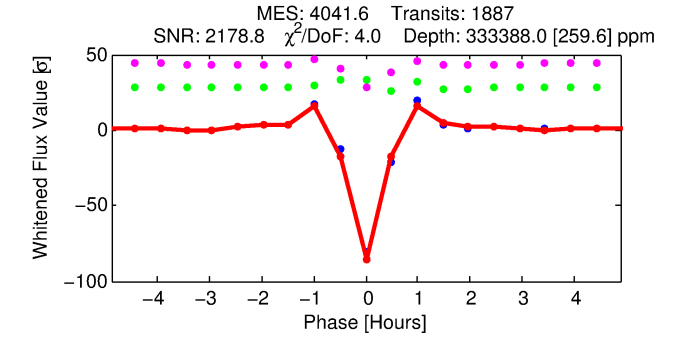
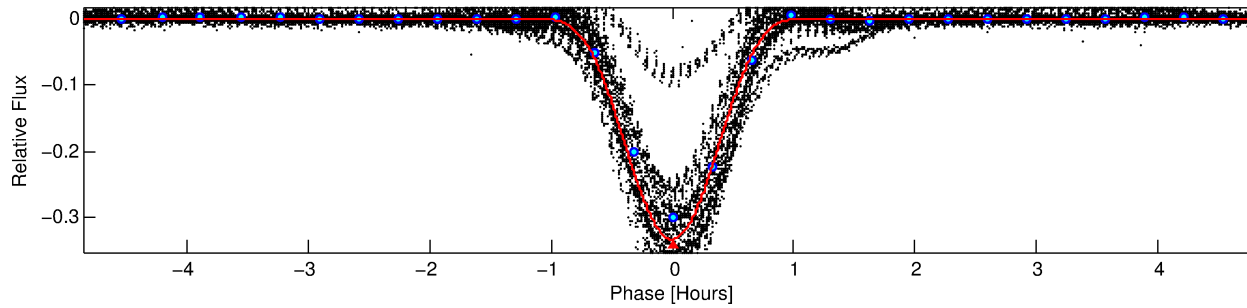
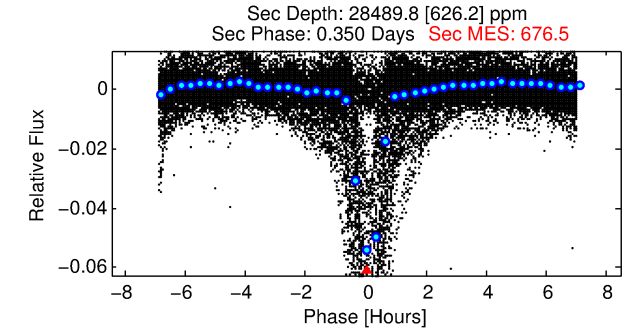
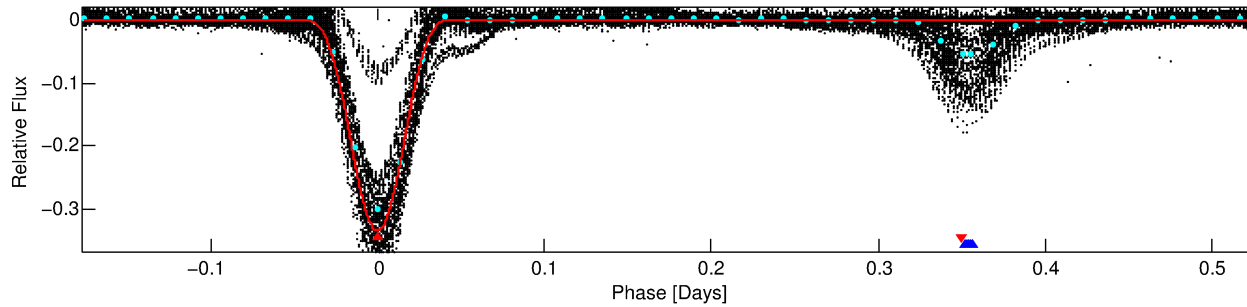
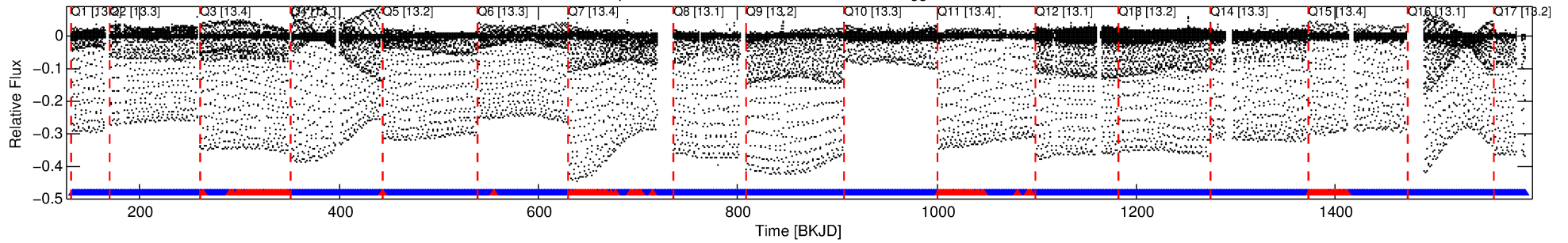
Ephemeris Match Information For 008094140-01

No Significant Match Found

DV One-Page Summary

KIC: 8094140 Candidate: 1 of 2 Period: 0.706 d
KOI: K06961.01 Corr: 0.963

Kp: 15.16 R*: 0.74 Rs Teff: 4429.0 K Logg: 4.57 Fe/H: 0.420



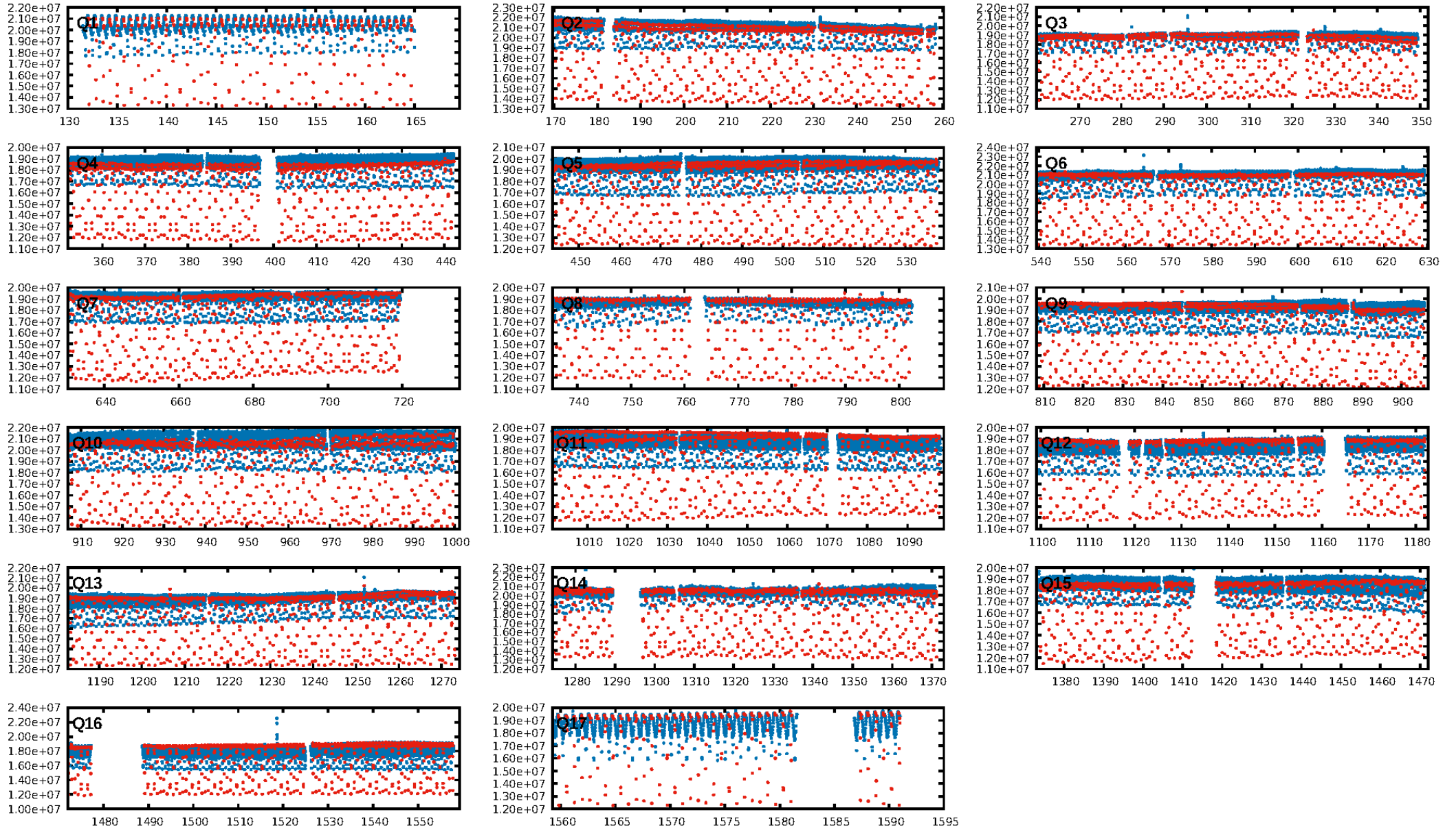
DV Fit Results:

Period = 0.70643 [0.00000] d
Epoch = 132.1460 [0.0000] BKJD
Rp/R* = 0.5921 [0.0181]
a/R* = 5.13 [0.02]
b = 0.50 [0.04]
Seff = 953.41 [167.01]
Teff = 1417 [62] K
Rp = 47.56 [4.08] Re
a = 0.0140 [0.0010] AU
Ag = 1.36 [0.17] [2.11σ]
Teffp = 2365 [91] K [8.6σ]

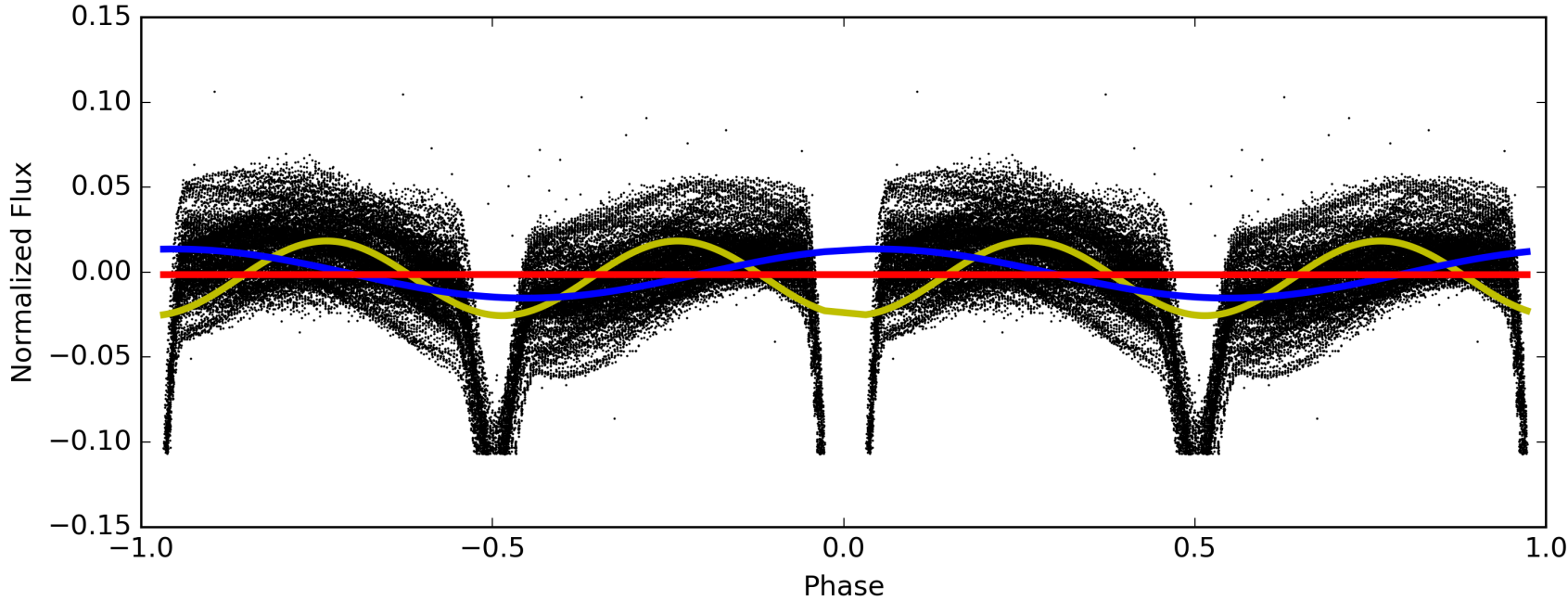
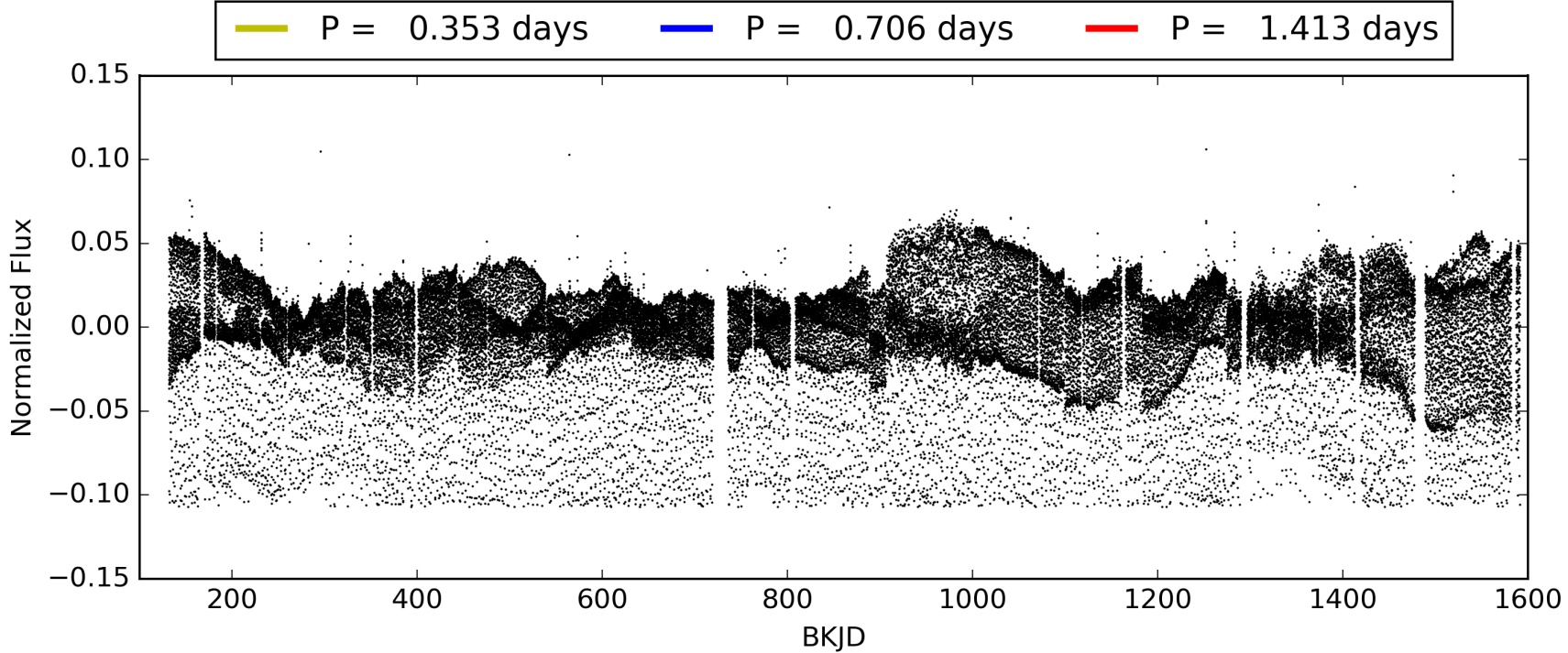
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.89 [1603/1803]
GhostDiagnostic-chr: N/A
Centroid-sig: N/A
Centroid-so: 0.507 arcsec [799.39σ]
OotOffset-rm: 0.050 arcsec [0.74σ]
KicOffset-rm: 0.493 arcsec [7.17σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 1.00 [17/17]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 008094140-01, PDC Light Curves

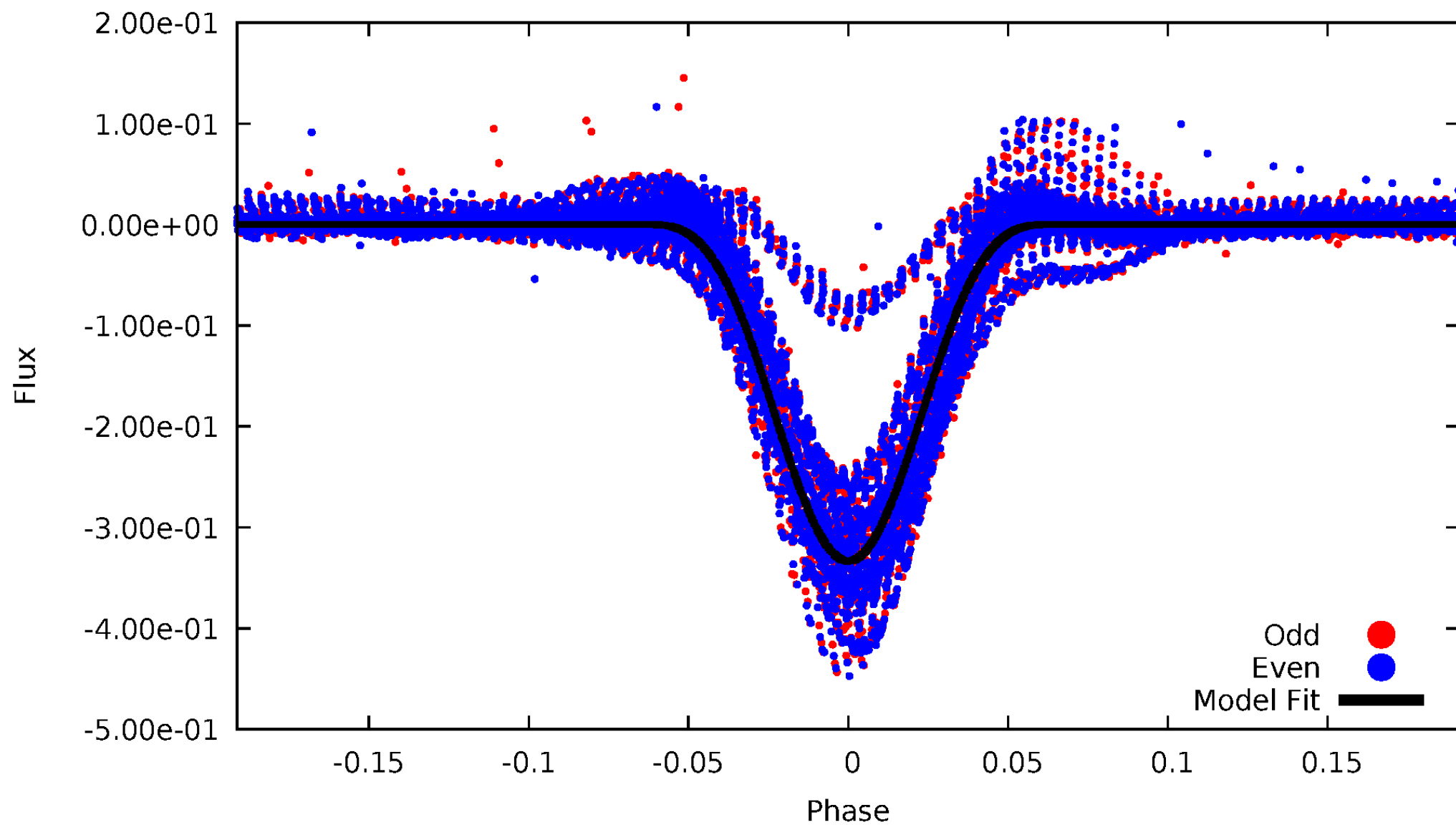


TCE 008094140-01



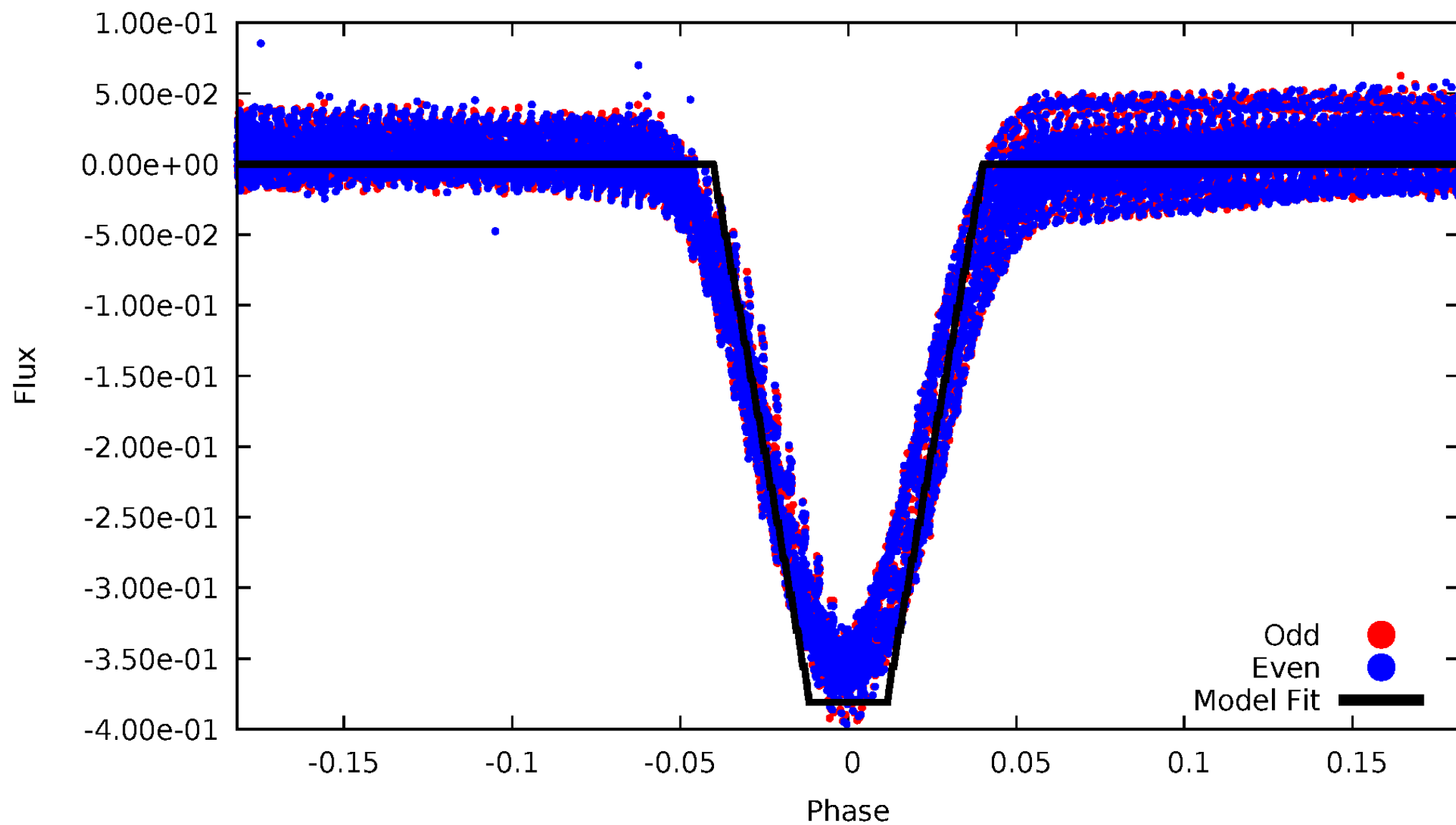
DV Odd/Even

TCE 008094140-01



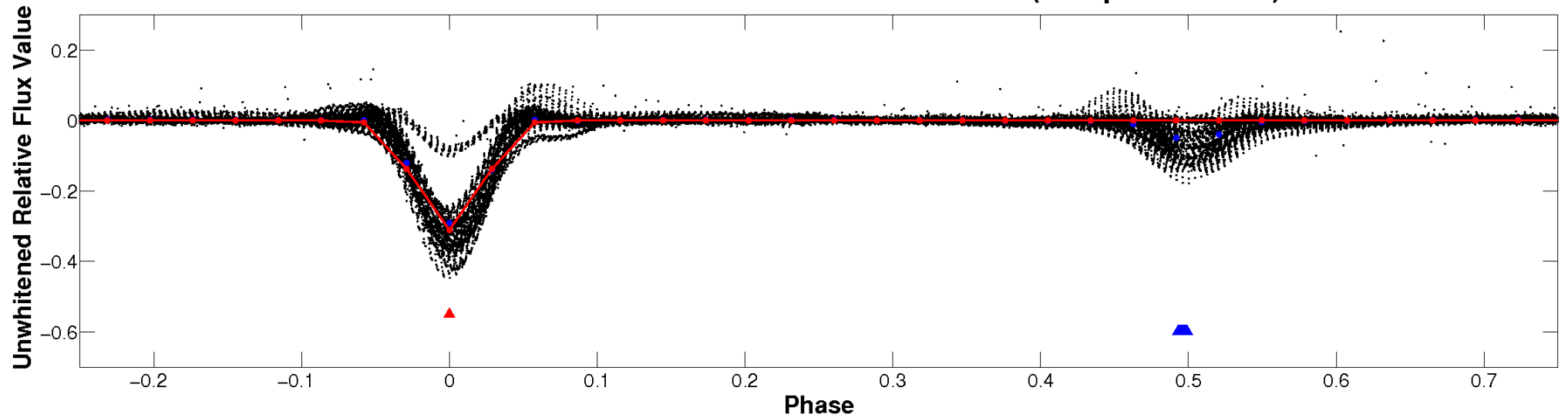
ALT Odd/Even

TCE 008094140-01

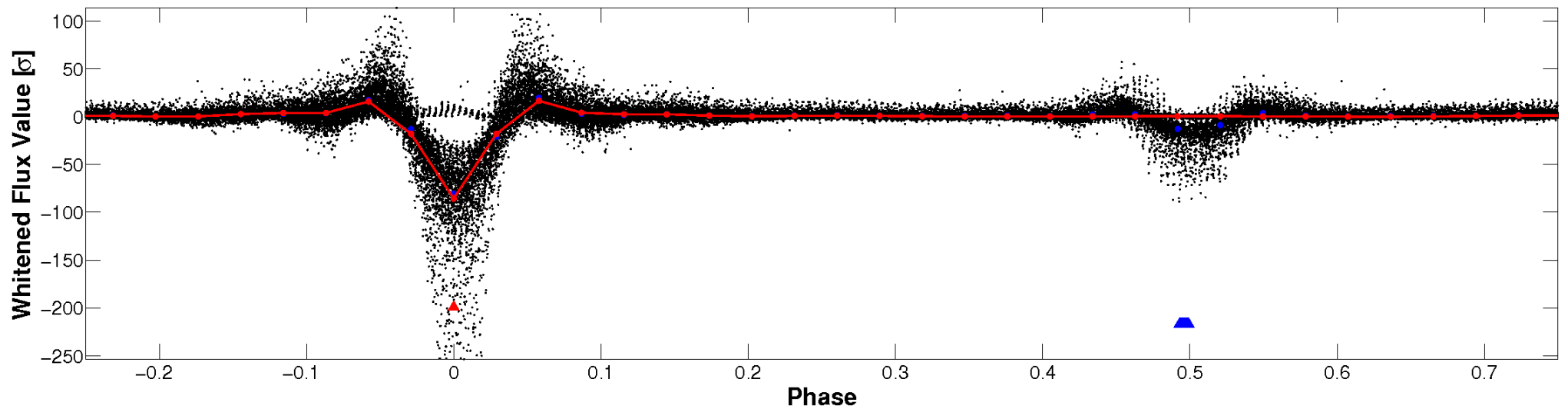


Non-Whitened Vs. Whitened Light Curve

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

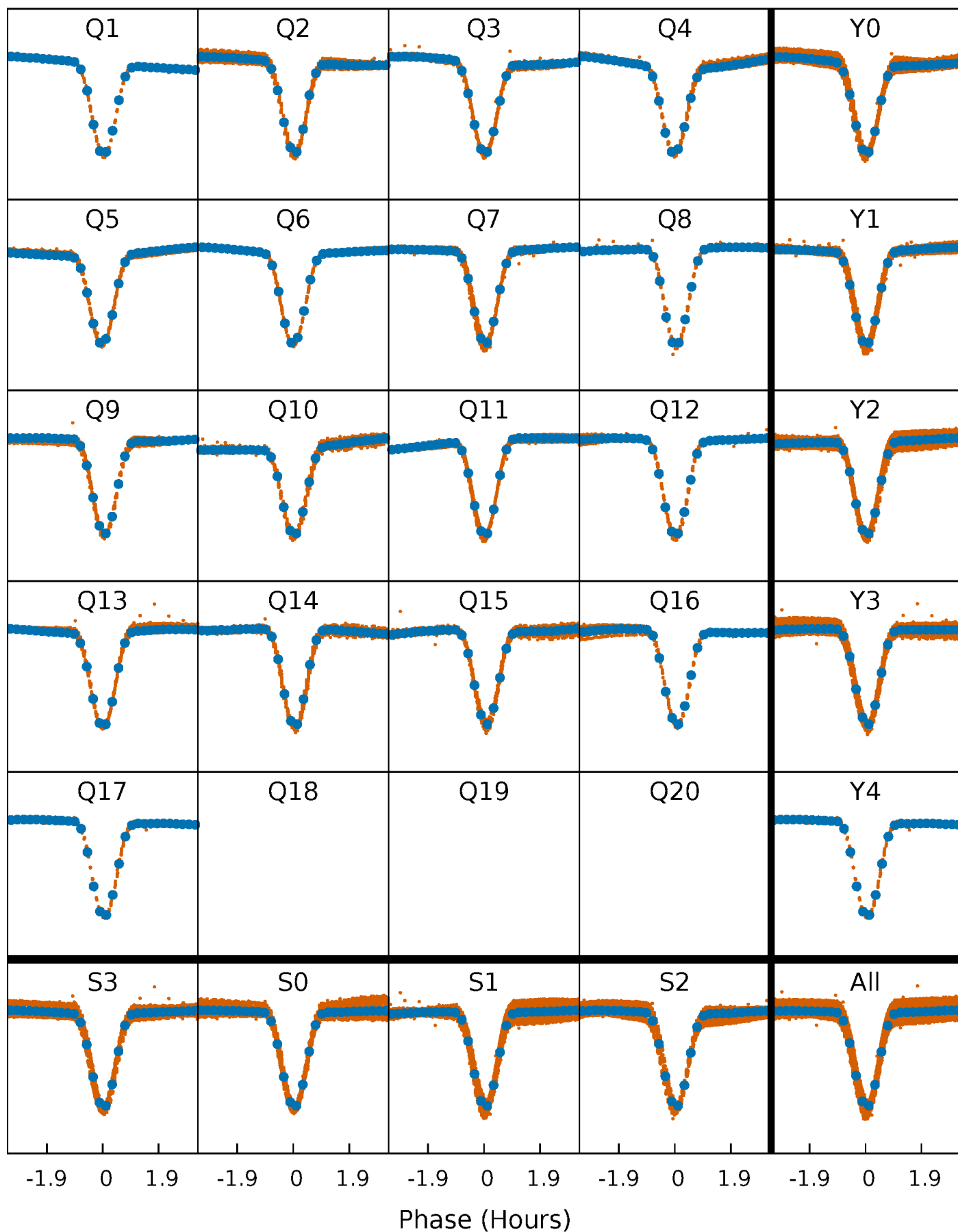


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



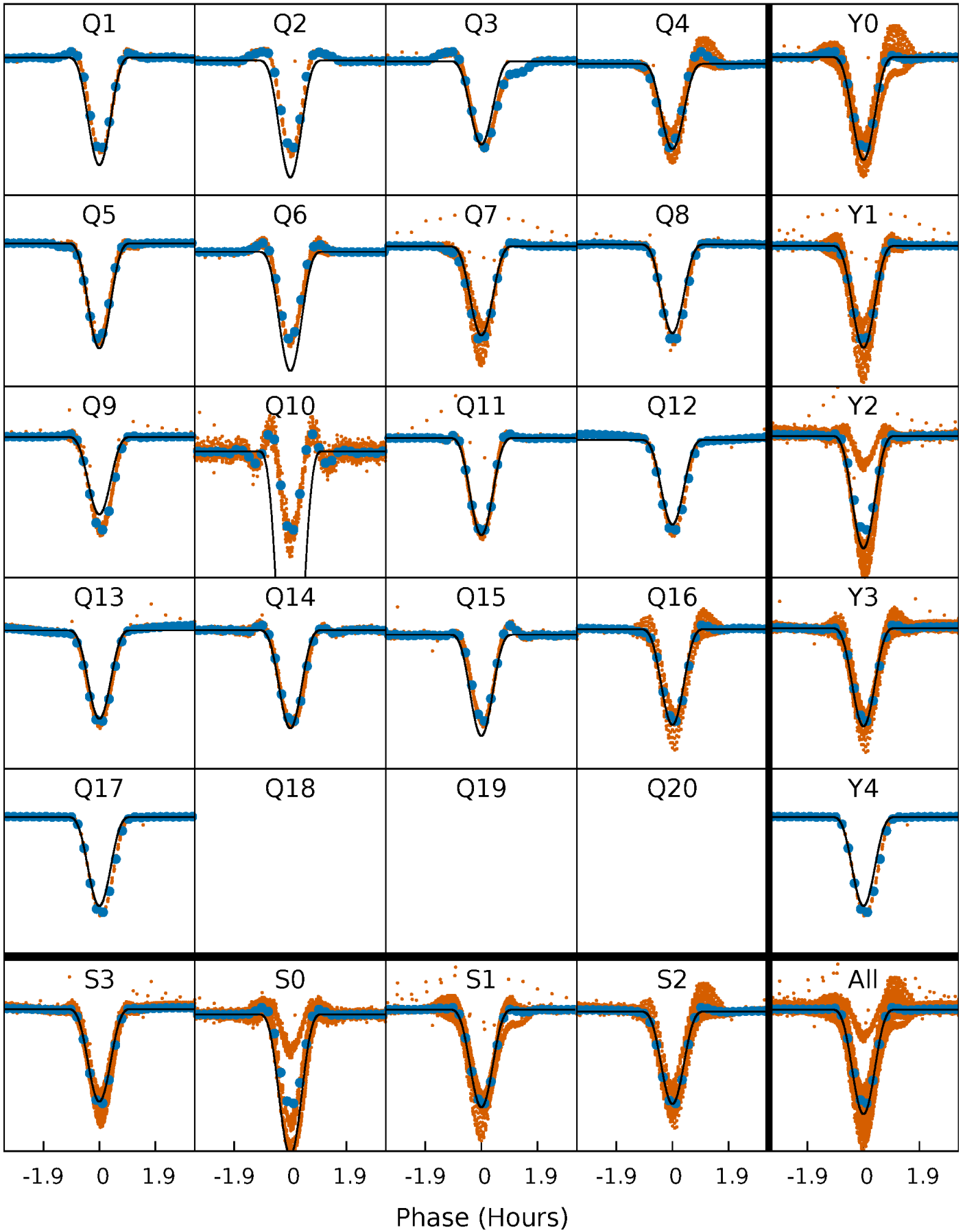
PDC Quarter-Phased Transit Curves

TCE 008094140-01 P= 0.706428 Days $T_0=132.145977$ (BKJD)



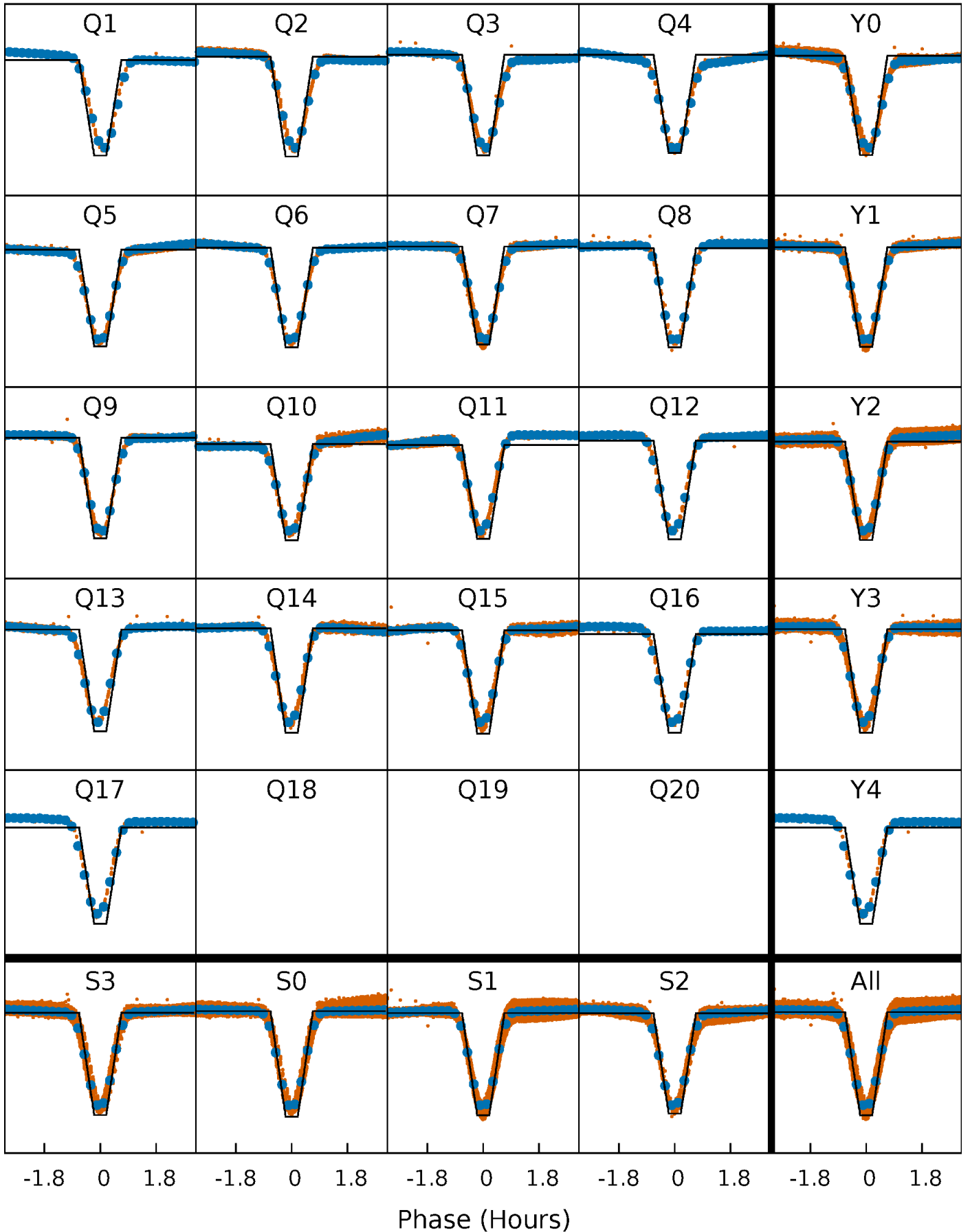
DV Quarter-Phased Transit Curves

TCE 008094140-01 P= 0.706428 Days $T_0=132.145977$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

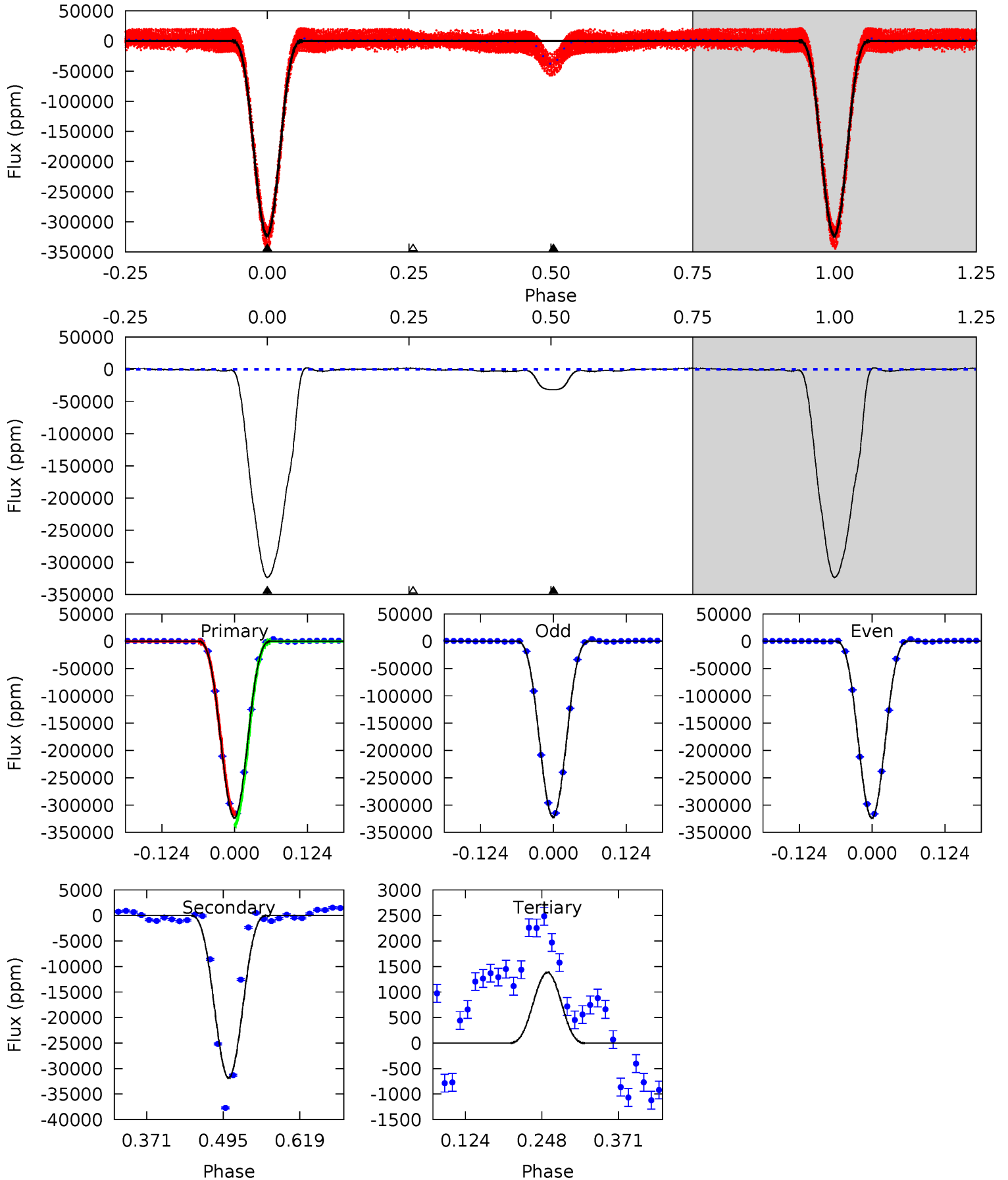
TCE 008094140-01 P= 0.706431 Days $T_0=132.143808$ (BKJD)



DV Model-Shift Uniqueness Test

008094140-01, P = 0.706428 Days, E = 131.439549 Days

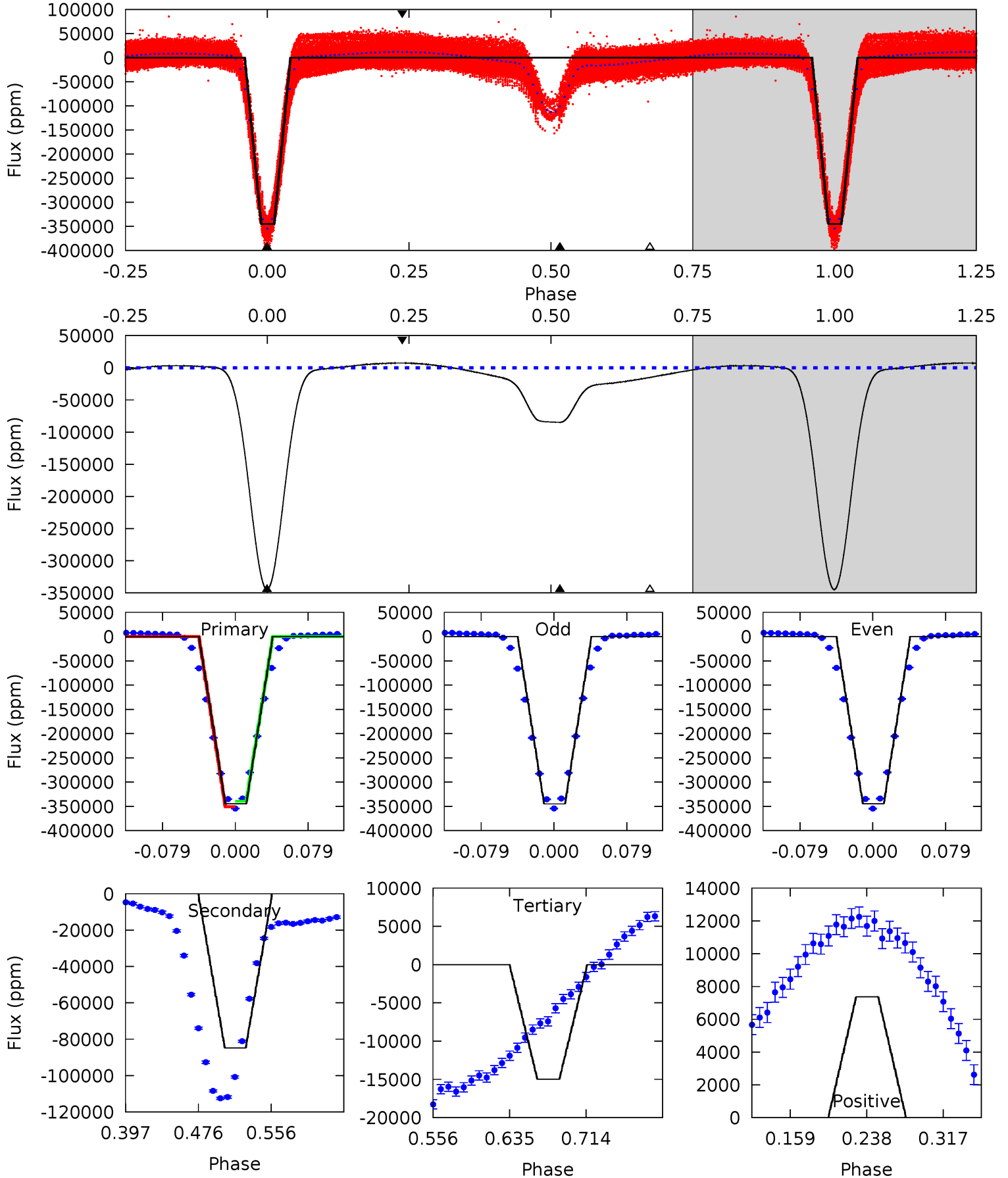
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3599	354.8	-15.4	0	4.52	1.54	10.5	3615	3599	370.3	354.8	10.5	0.95	0.01	0



Alt Model-Shift Uniqueness Test

008094140-01, P = 0.706431 Days, E = 131.437377 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1400	344.3	60.9	29.9	4.61	1.75	36.7	1340	1370	283.4	314.3	0.69	1.00	0.02	22.7



Stellar Parameters For KIC 008094140

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4429^{+154}_{-154}	$4.569^{+0.060}_{-0.016}$	$0.420^{+0.050}_{-0.300}$	$0.736^{+0.025}_{-0.059}$	$0.733^{+0.037}_{-0.046}$	$2.590^{+0.644}_{-0.174}$
	+3%/-3%	+1%/-0%	+12%/-71%	+3%/-8%	+5%/-6%	+25%/-7%
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 008094140-01 / KOI 6961.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-31865 ± 90	$47.07^{+2.14}_{-2.50}$	1968^{+76}_{-75}	2928^{+78}_{-84}	$1.614^{+0.156}_{-0.128}$
Alt.	-84740 ± 246	$49.11^{+2.13}_{-2.54}$	1961^{+76}_{-74}	3426^{+104}_{-112}	$4.183^{+0.380}_{-0.330}$

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 $A_{obs} \gg 1.0$

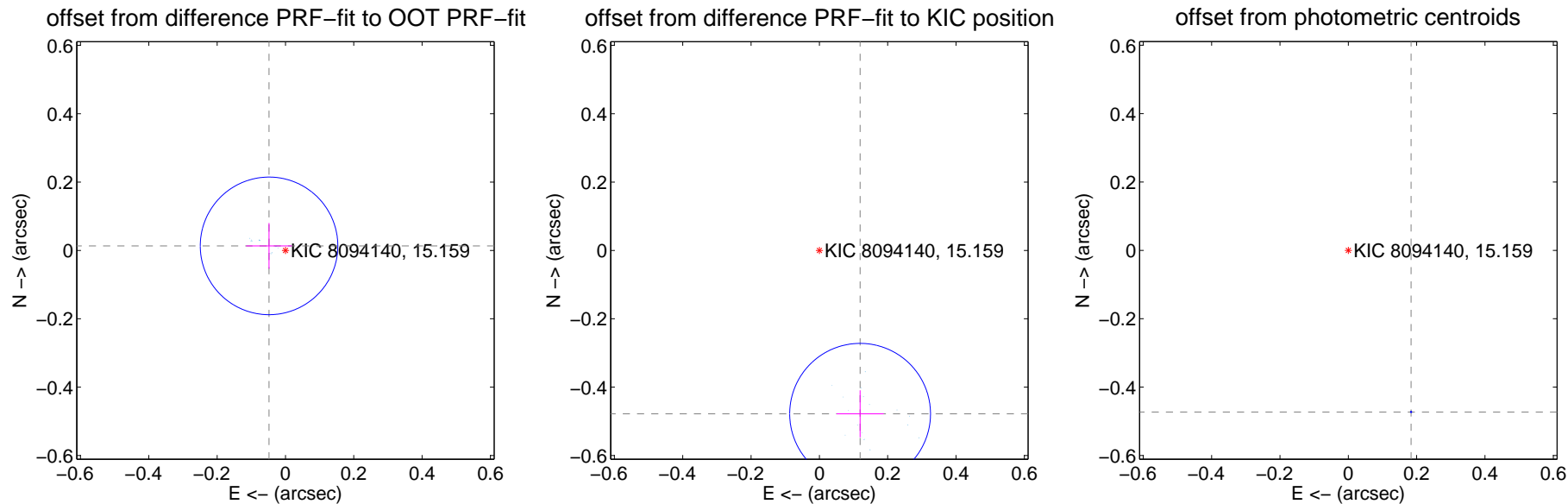
DV Centroid Data

Supplemental centroid analysis for 008094140-01. Kepler magnitude: 15.16. Transit SNR 2178.80

There are 17 quarters with good PRF difference image offsets

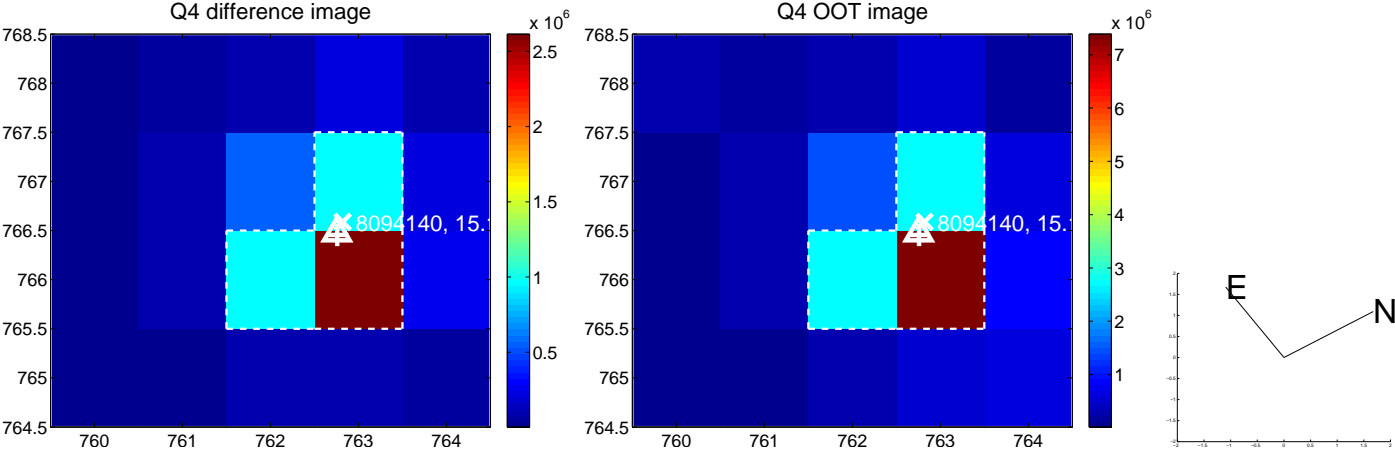
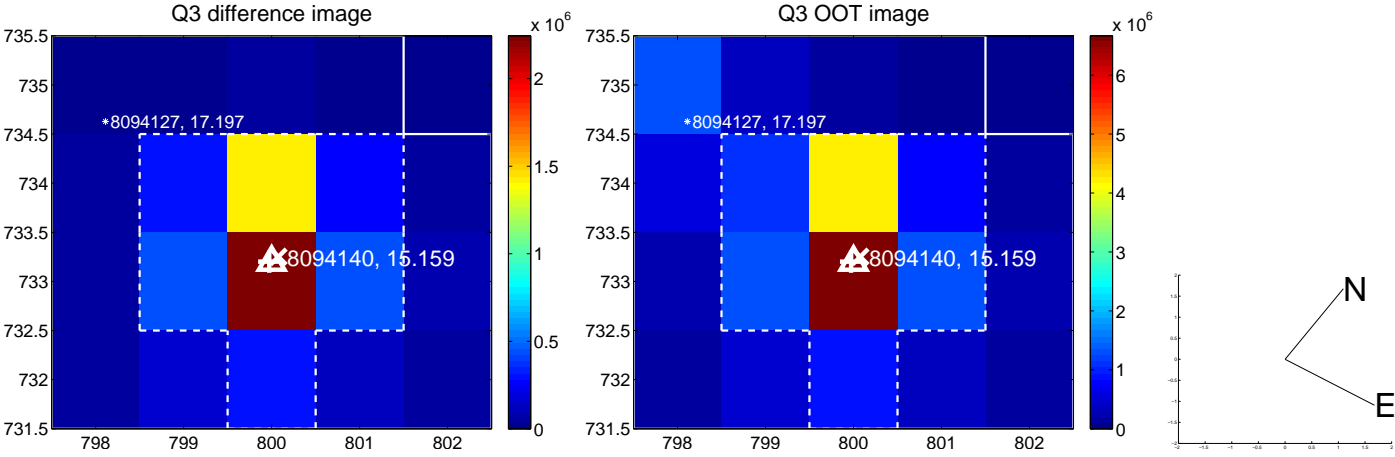
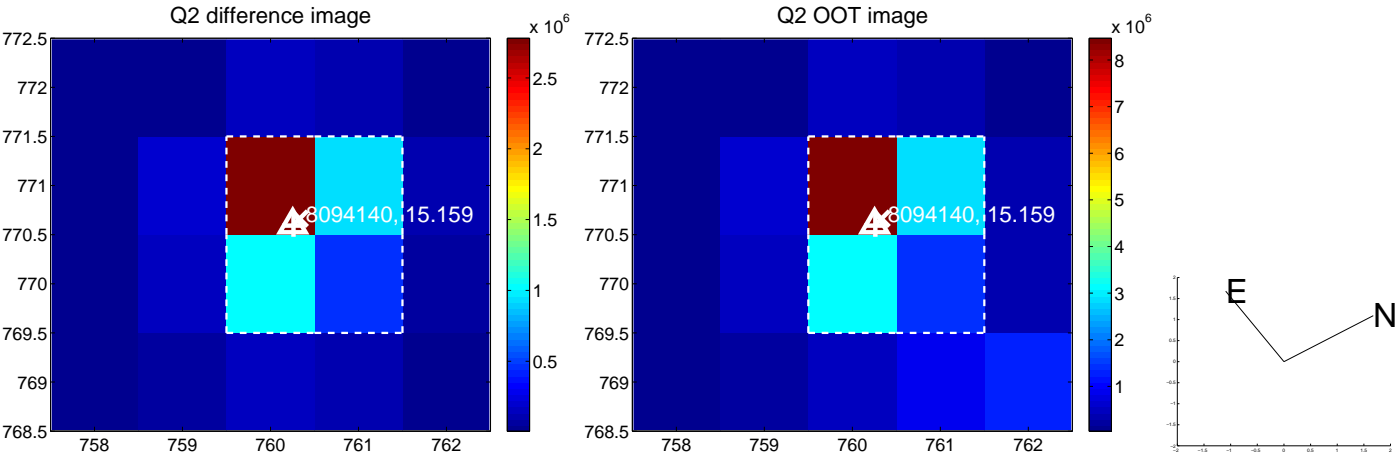
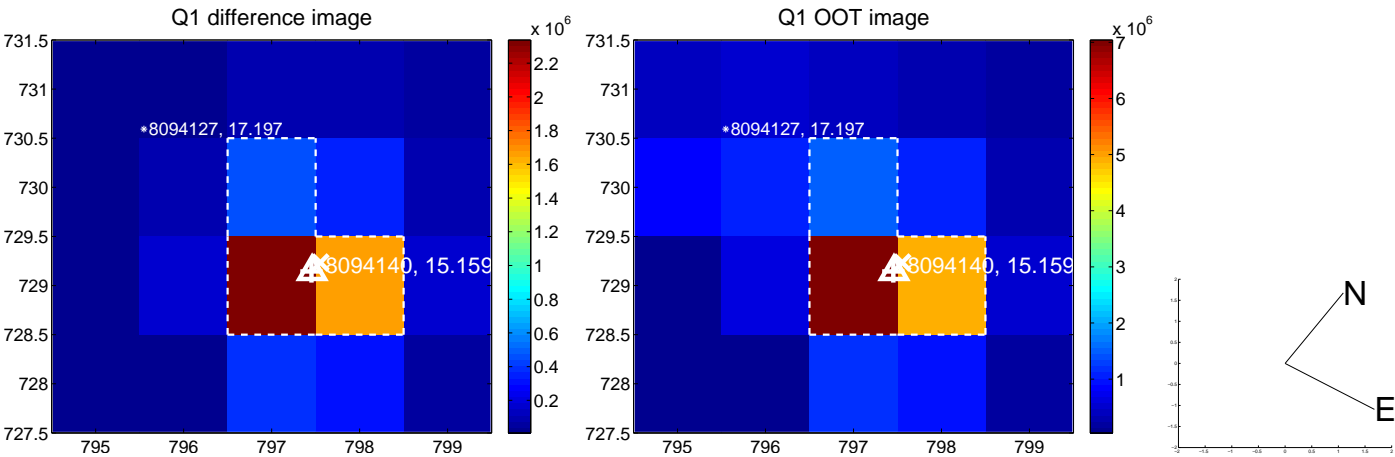
The direct PRF centroid is offset from the target star catalog position by about 0.62 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.050 ± 0.067	0.74	0.048 ± 0.067	0.013 ± 0.067
PRF-fit source offset from KIC position	0.493 ± 0.069	7.17	-0.119 ± 0.069	-0.478 ± 0.069
photometric centroid source offset	0.51 ± 0.00	799.39	-0.18 ± 0.00	-0.47 ± 0.00

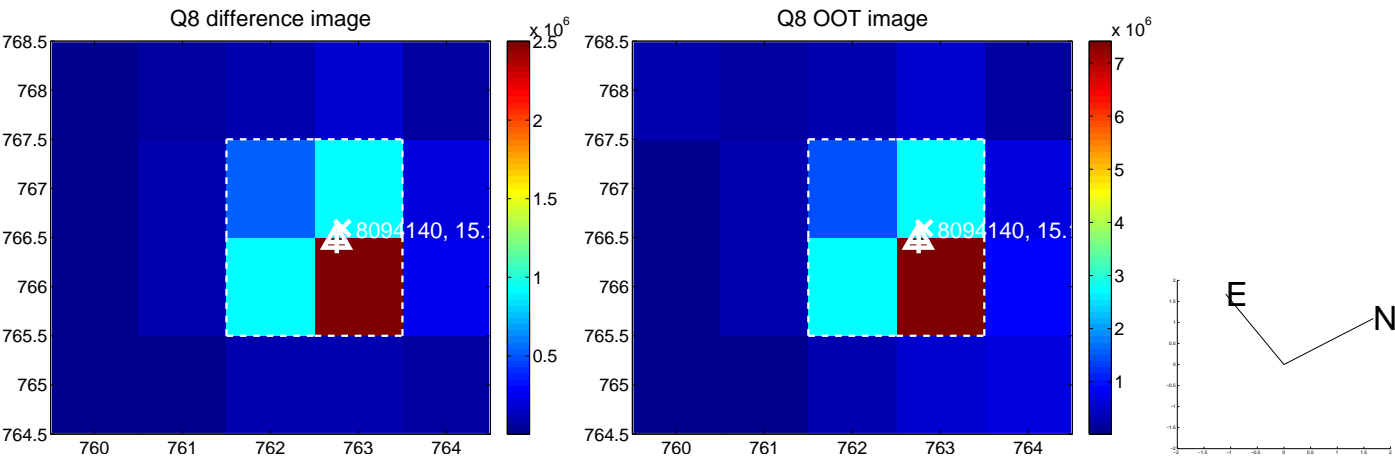
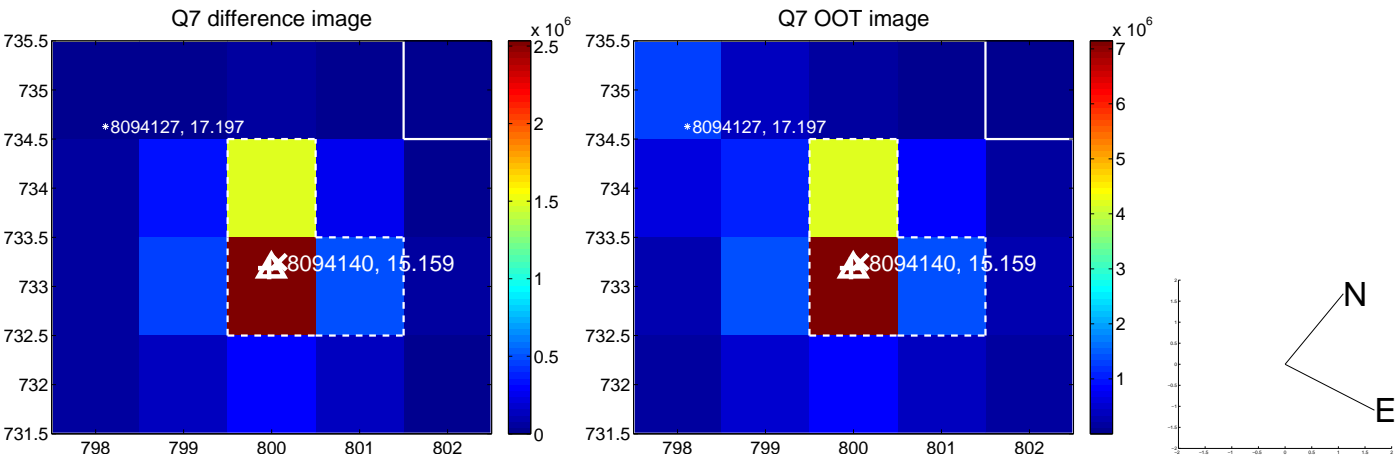
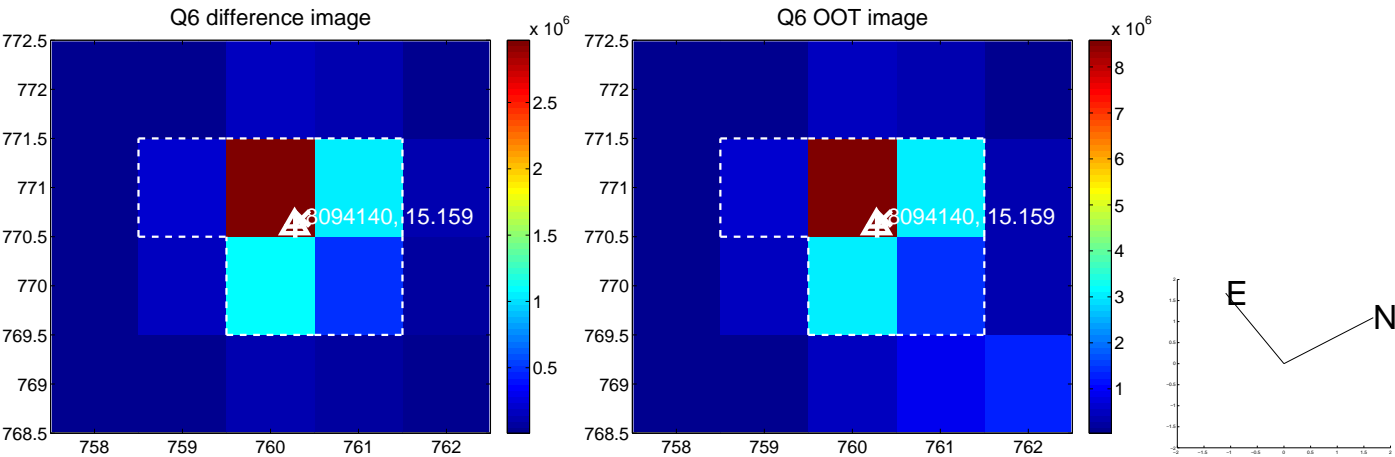
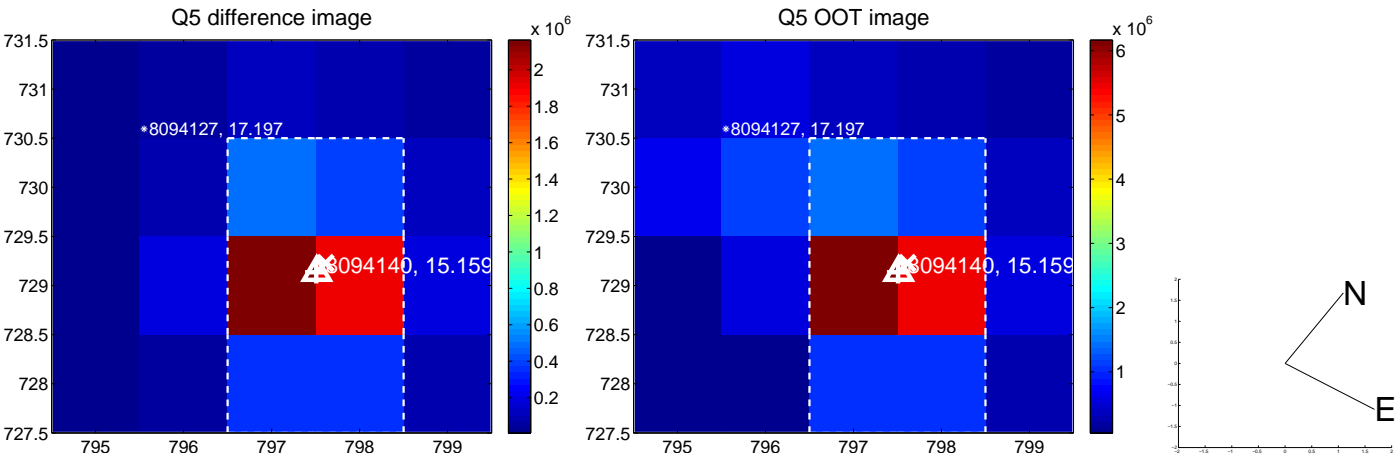


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

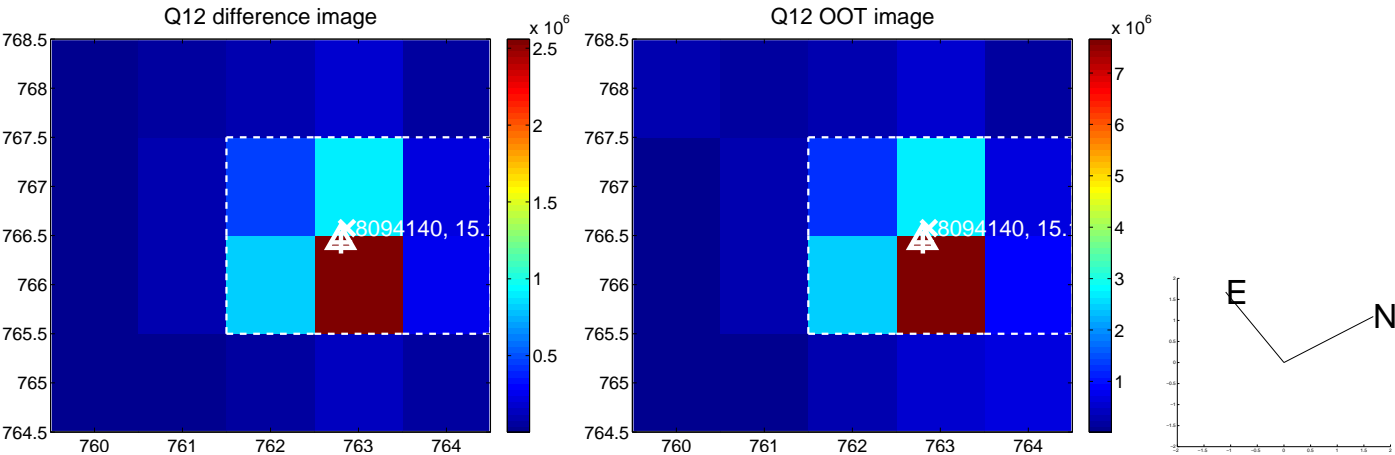
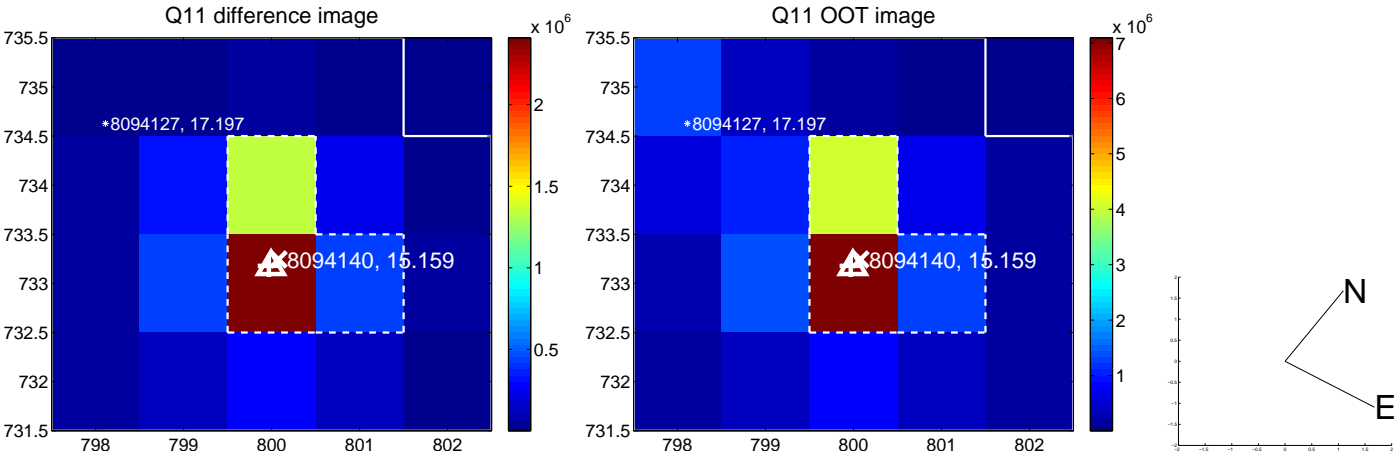
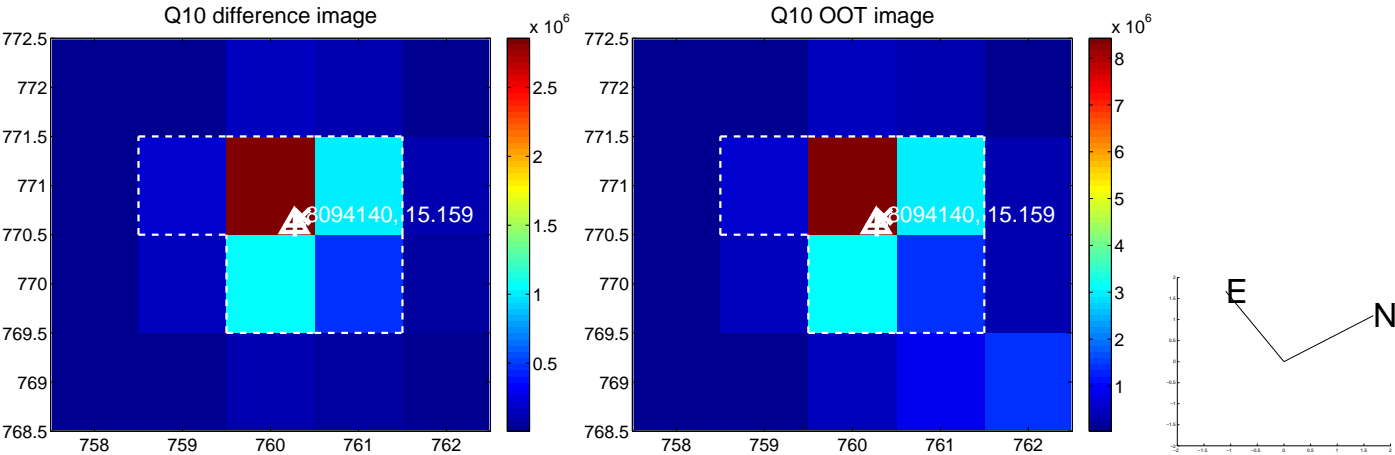
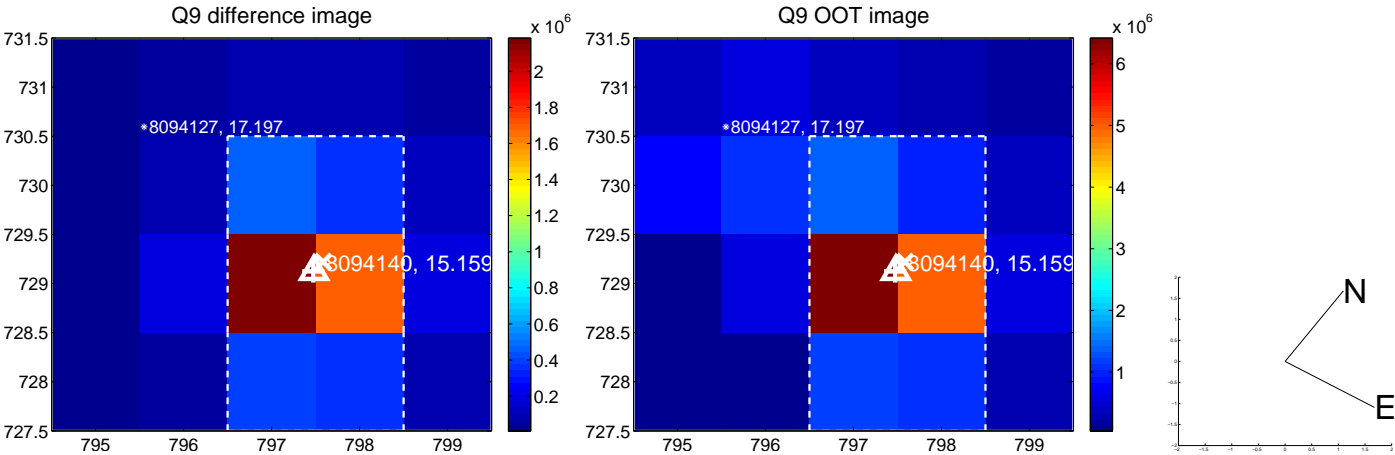
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



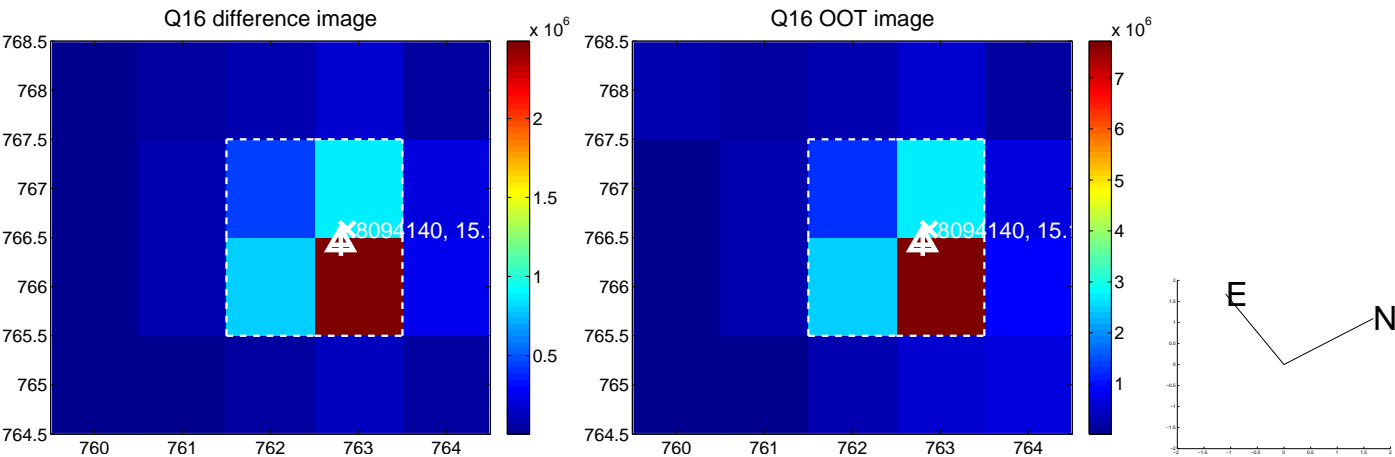
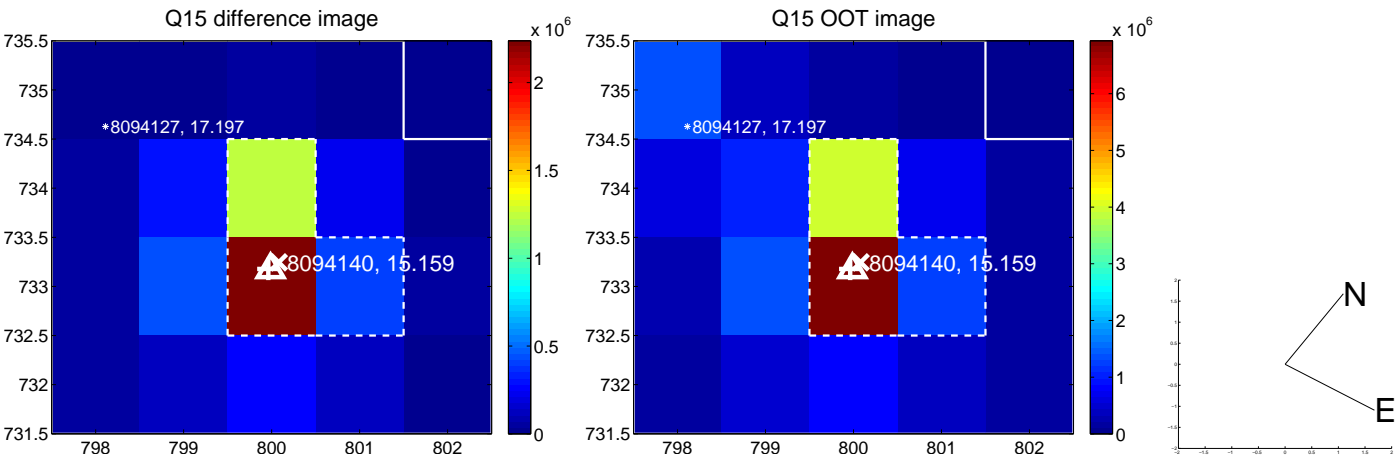
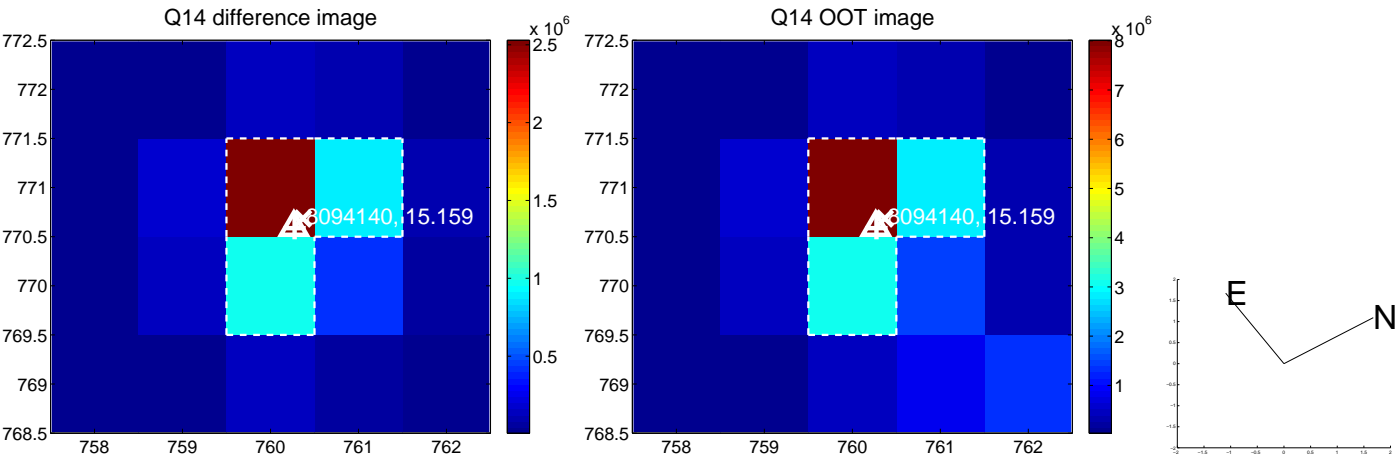
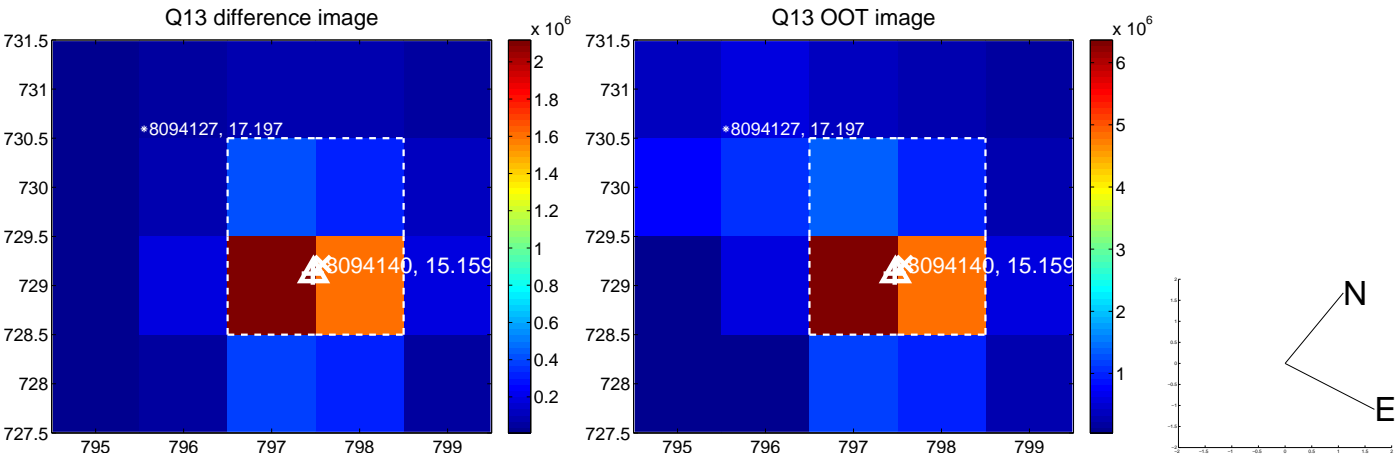
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



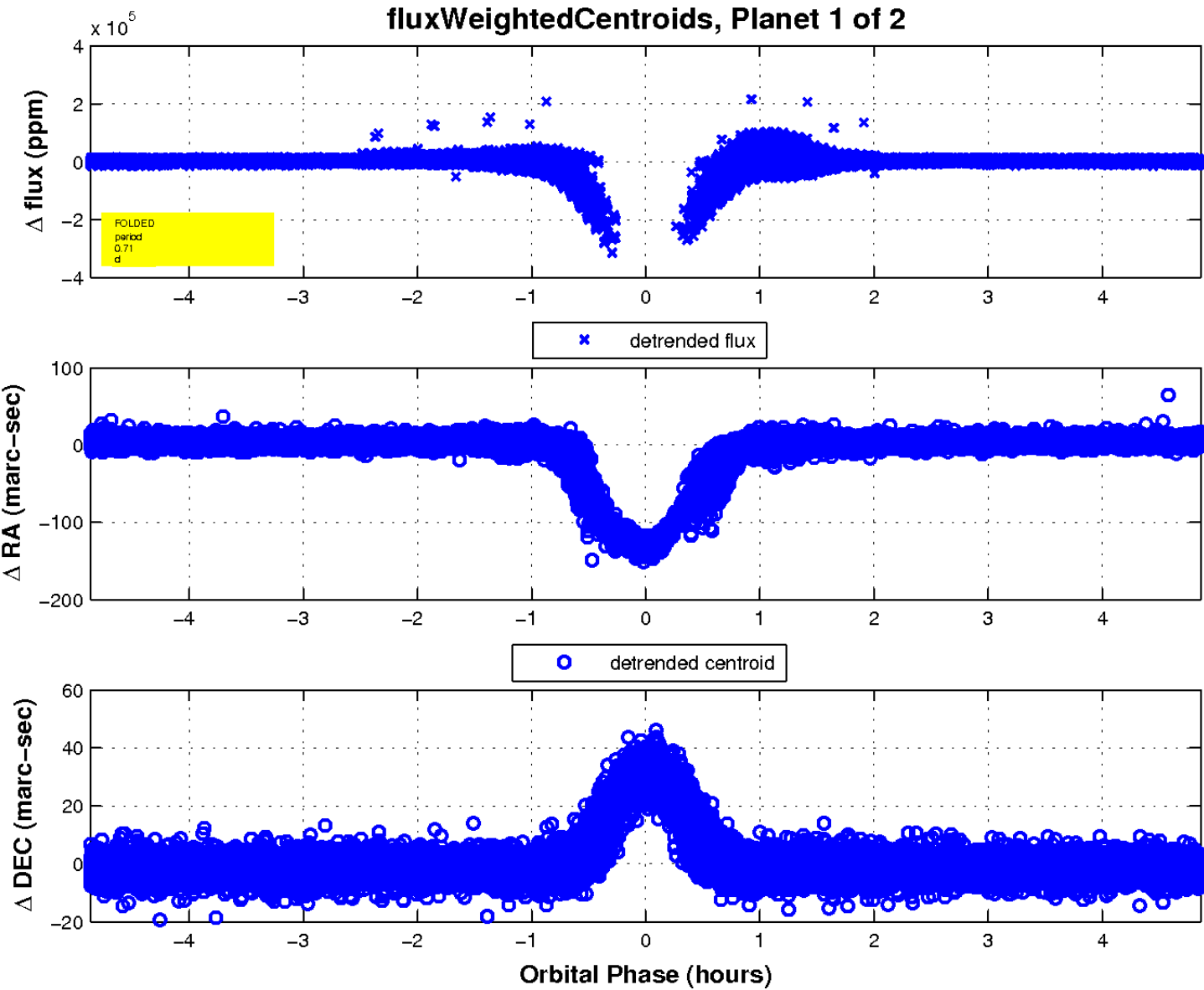
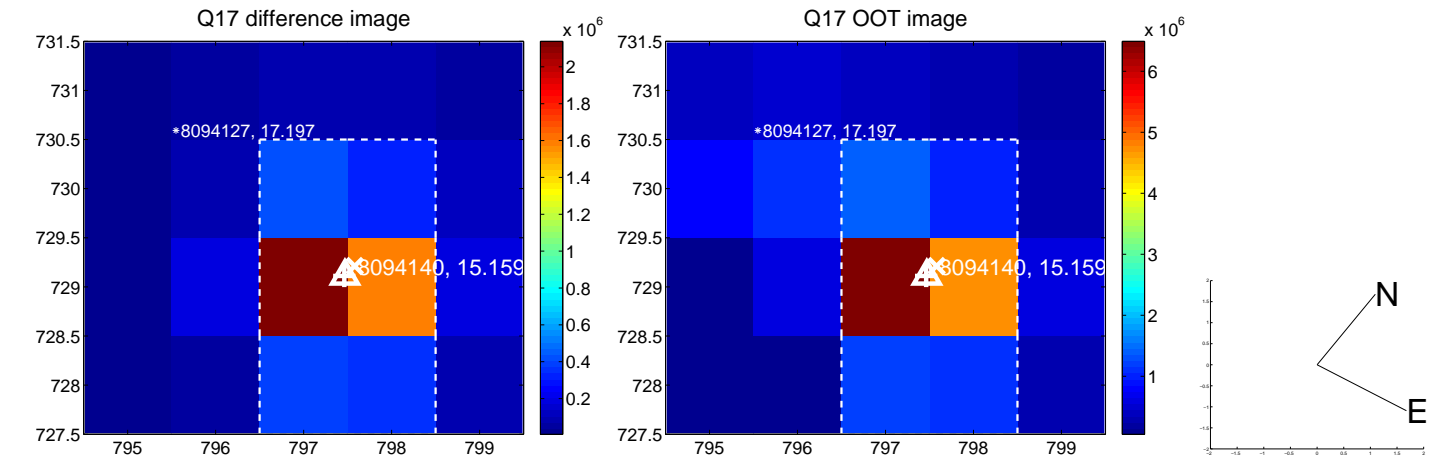
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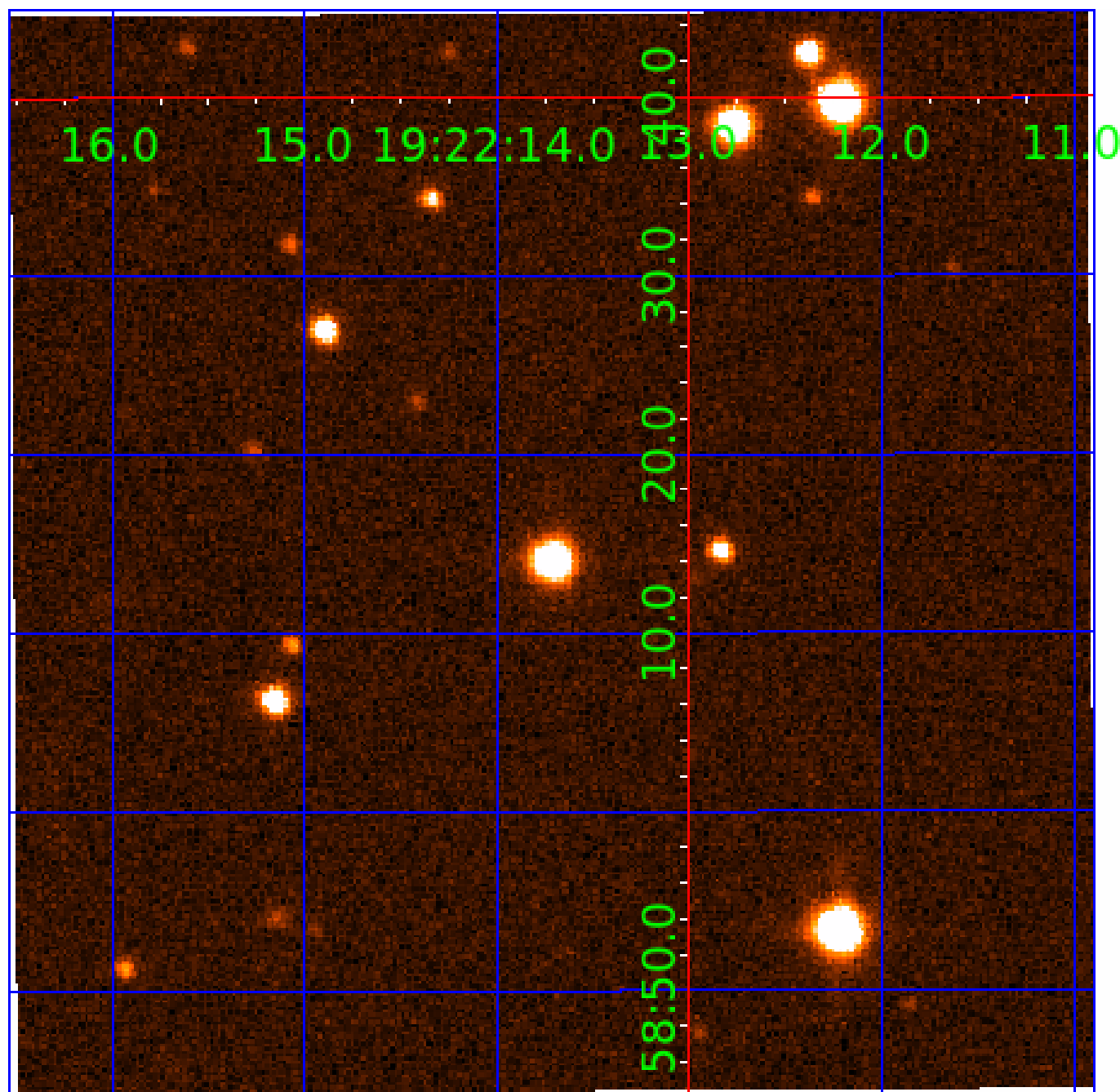


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008094140

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})
008094140-01	OBS	6961.01	0.706428	132.145977	333388.0	1.621	4041.6	2178.8	0.74	4429	47.55	953.41
008094140-02	OBS	No	0.706425	131.792244	47921.6	1.500	838.1	-1.0	0.74	4429	15.50	953.41

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008094140-01	OBS	FP	0.00	0	1	0	0	SWEET_EB—MOD_SEC_DV—MOD_SEC_ALT—DEEP_V_SHAPED—HAS_SEC_TCE—CENT_KIC_POS
008094140-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE—CENT_NOFITS

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.

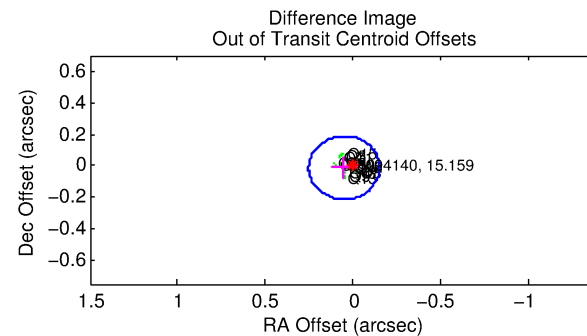
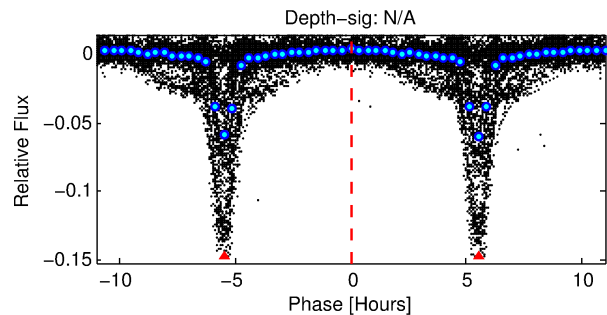
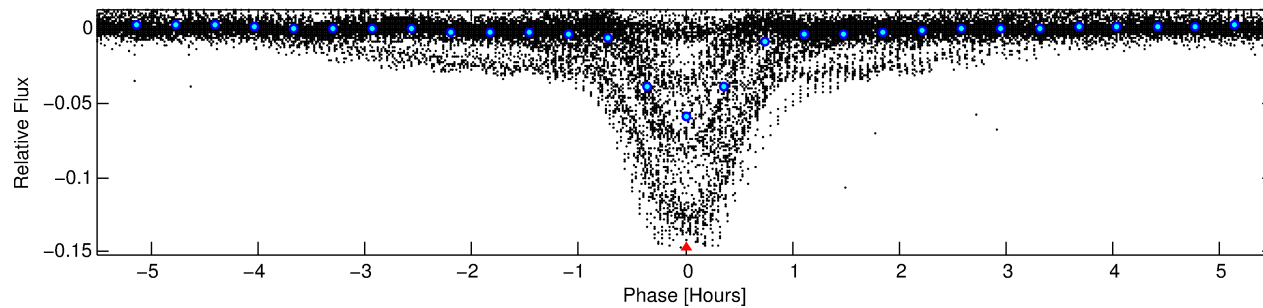
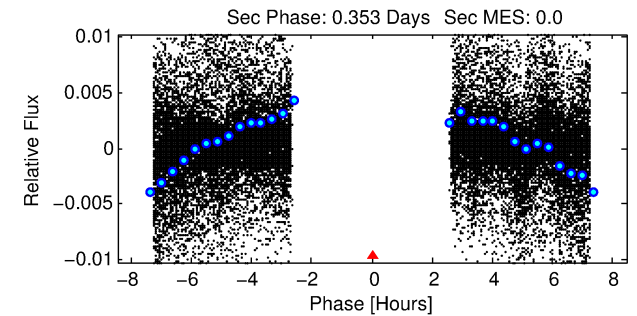
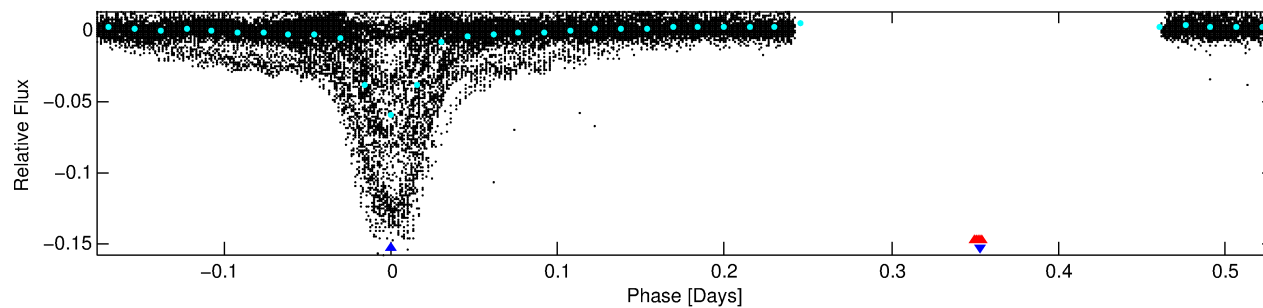
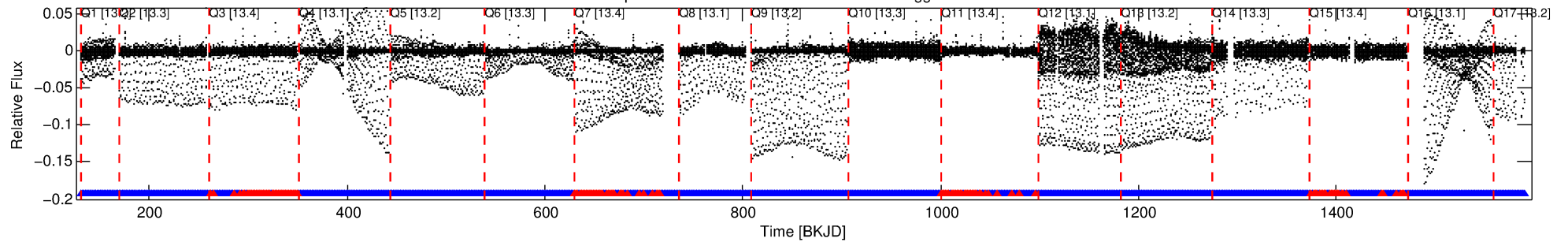
Ephemeris Match Information For 008094140-02

No Significant Match Found

DV One-Page Summary

KIC: 8094140 Candidate: 2 of 2 Period: 0.706 d
KOI: K06961 Corr: No Ephemeris Match

Kp: 15.16 R*: 0.74 Rs Teff: 4429.0 K Logg: 4.57 Fe/H: 0.420



TPS TCE Results:

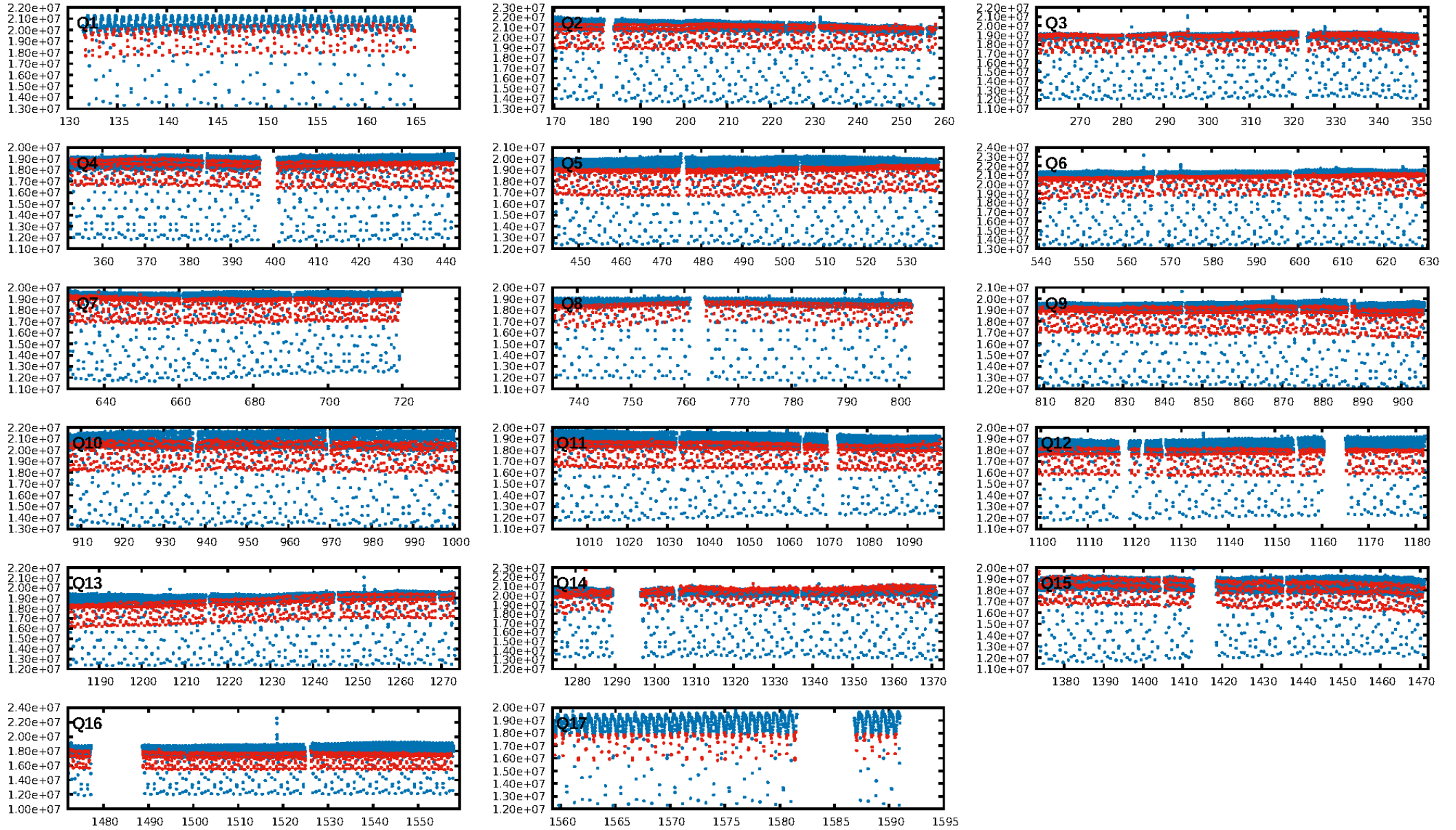
Period = 0.70643 d
Epoch = 131.7922 BKJD

DV fit results are unavailable

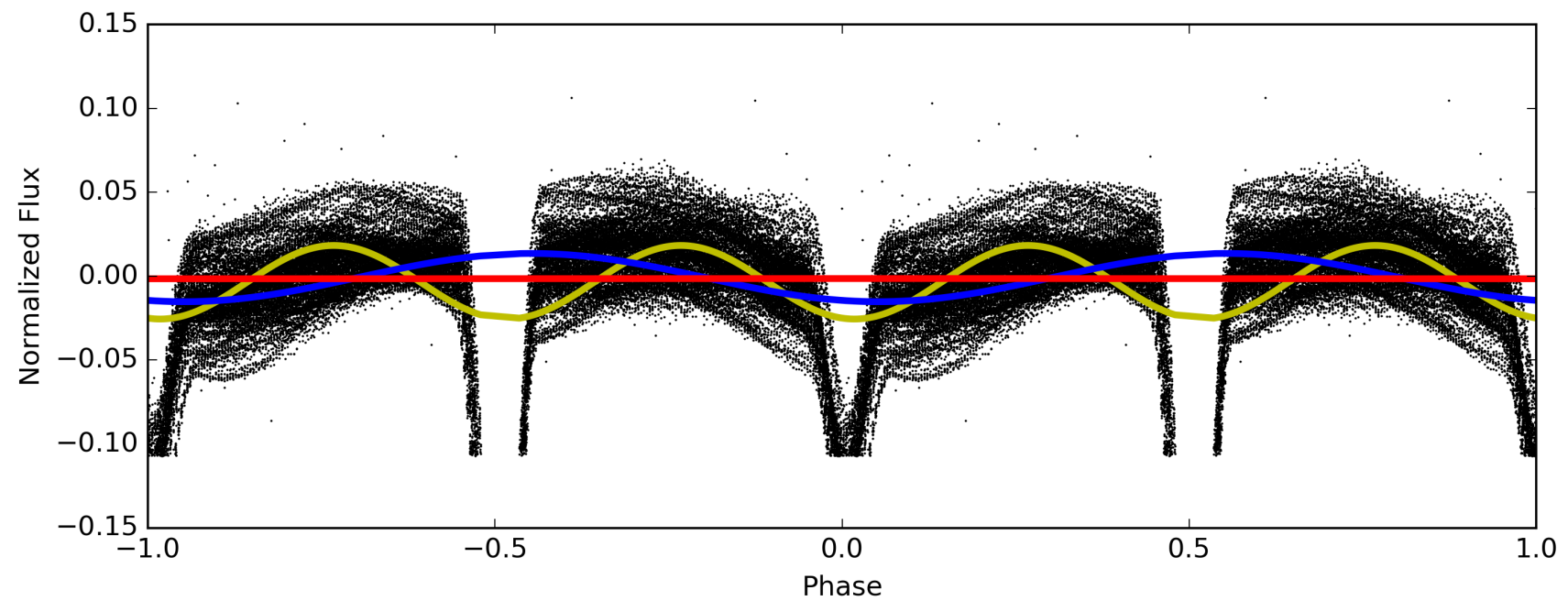
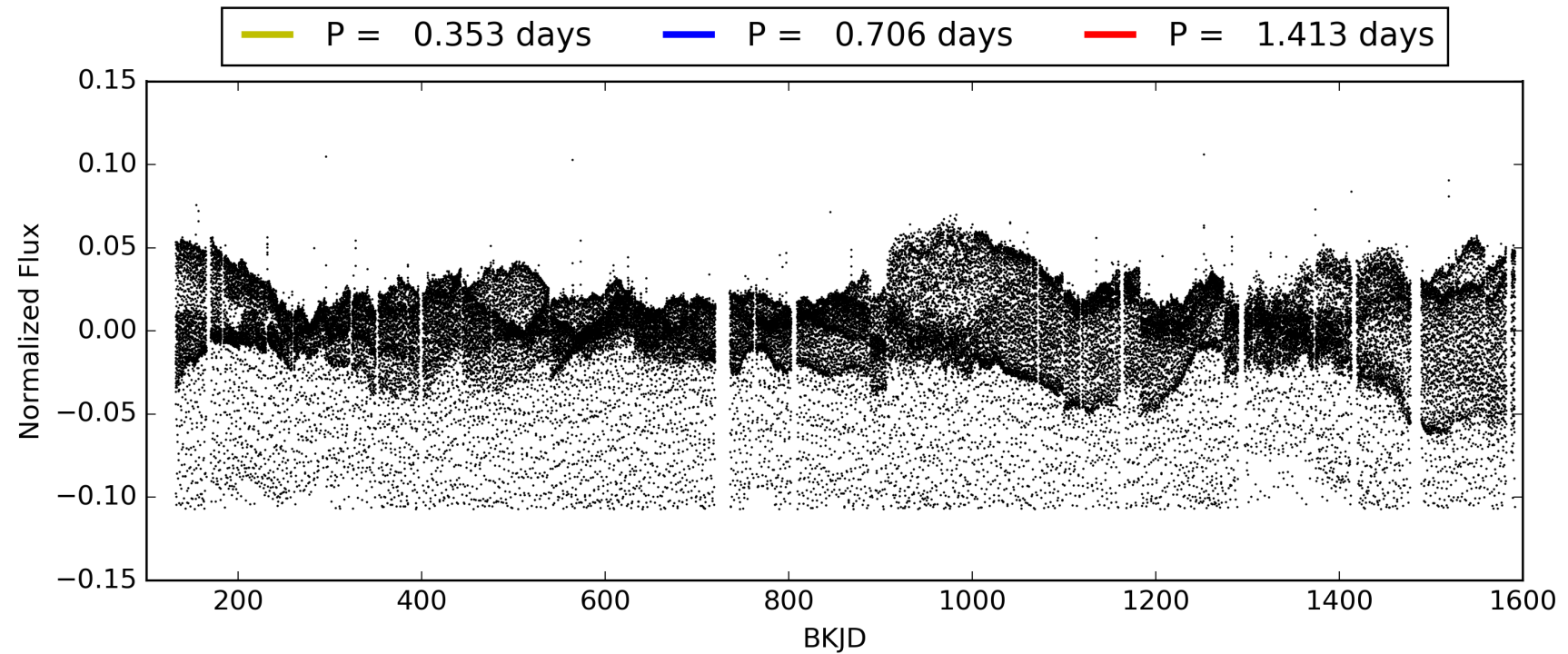
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.88 [1597/1810]
GhostDiagnostic-chr: N/A
Centroid-sig: N/A
Centroid-so: 0.623 arcsec [563.93σ]
OotOffset-rm: 0.054 arcsec [0.80σ]
KicOffset-rm: 0.530 arcsec [7.33σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 1.00 [17/17]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 008094140-02, PDC Light Curves

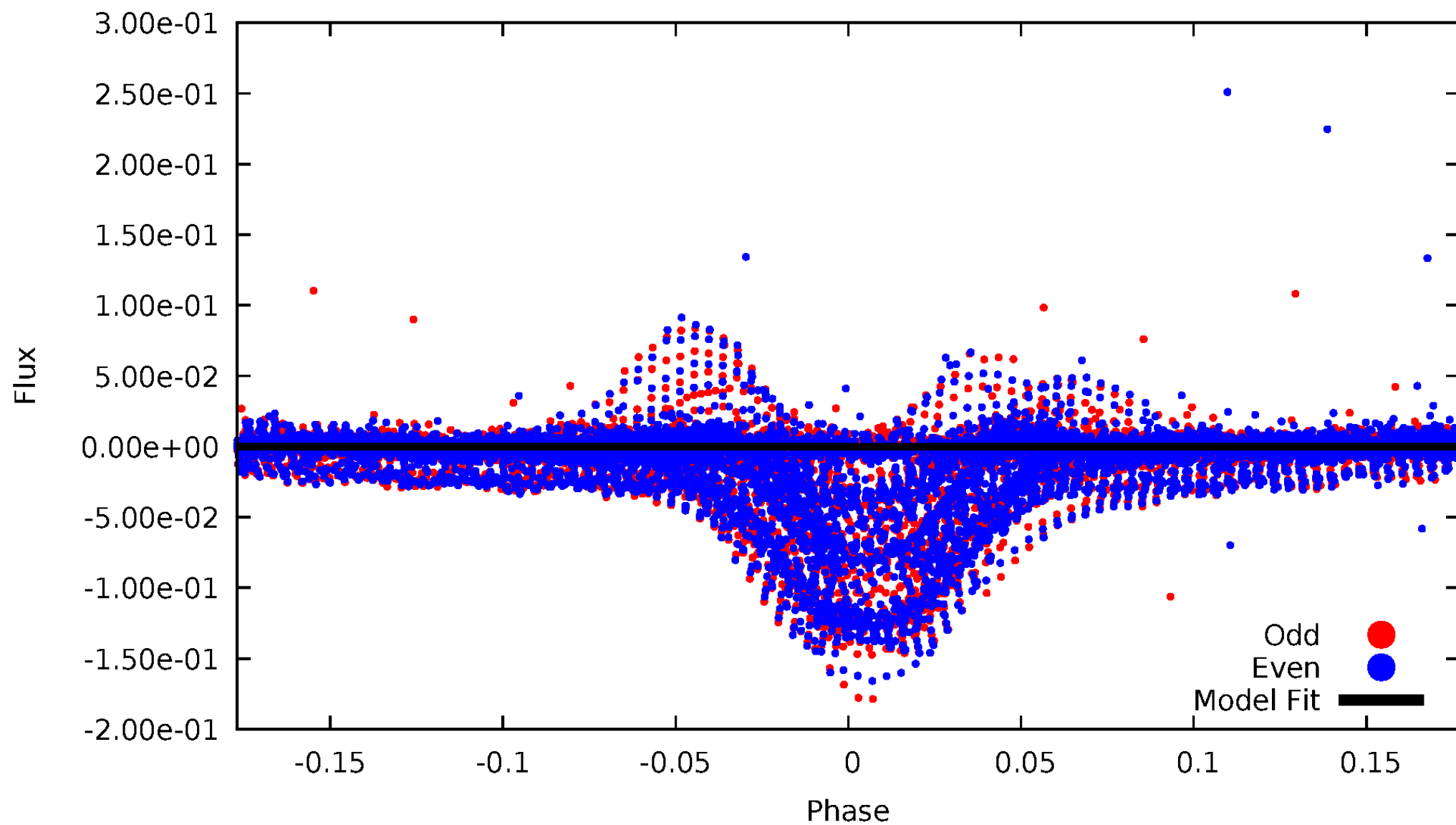


TCE 008094140-02



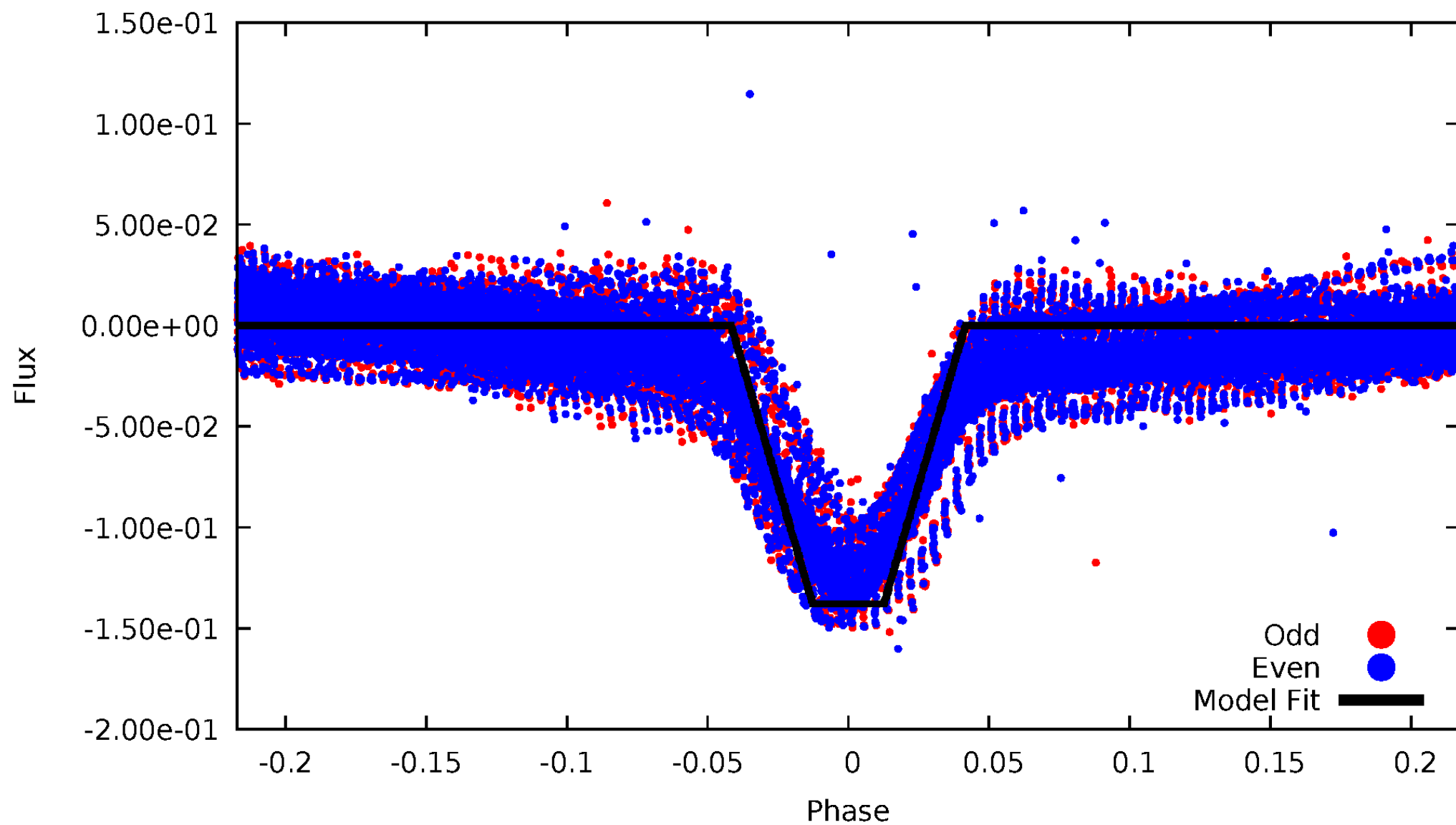
DV Odd/Even

TCE 008094140-02



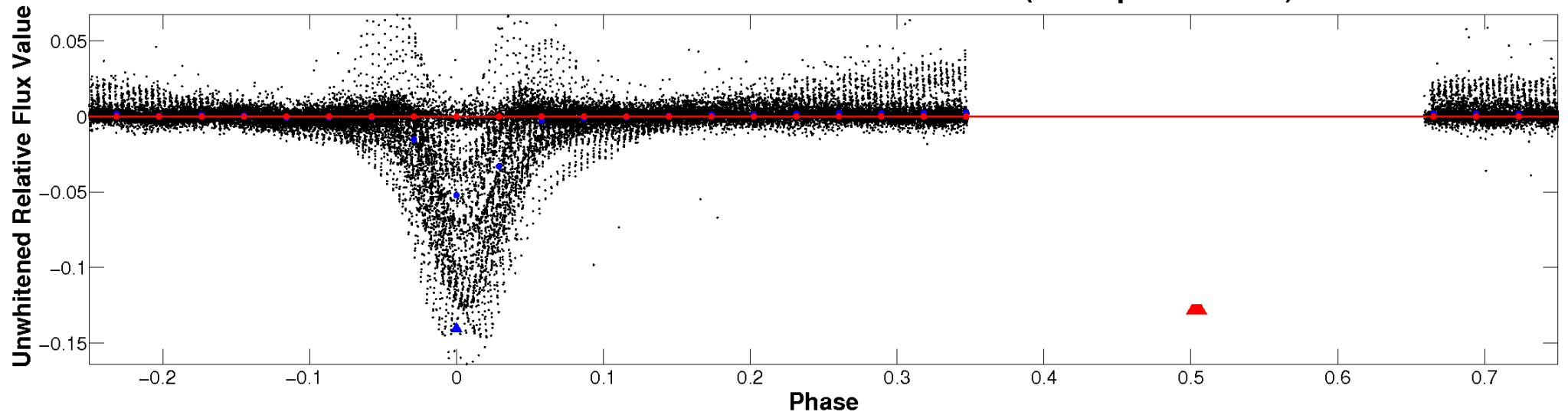
ALT Odd/Even

TCE 008094140-02

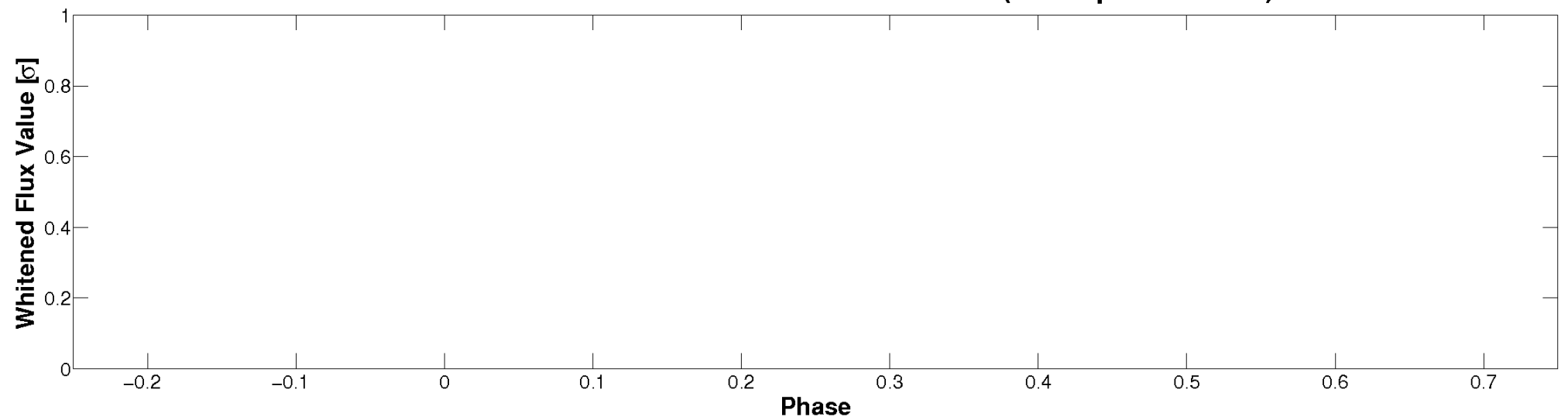


Non-Whitened Vs. Whitened Light Curve

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

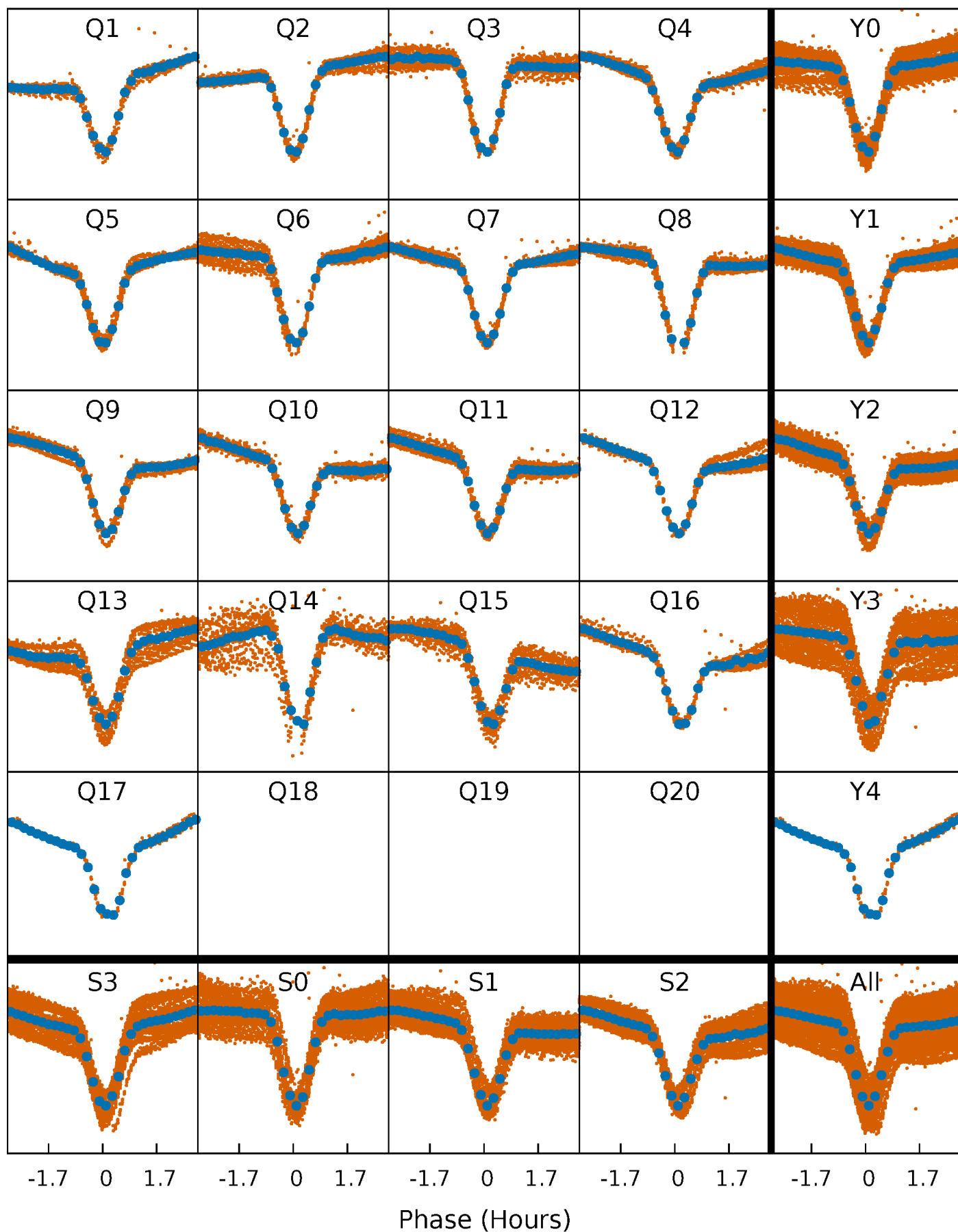


Planet 2 : Phased Whitened Flux Time Series (TPS Epoch/Period)



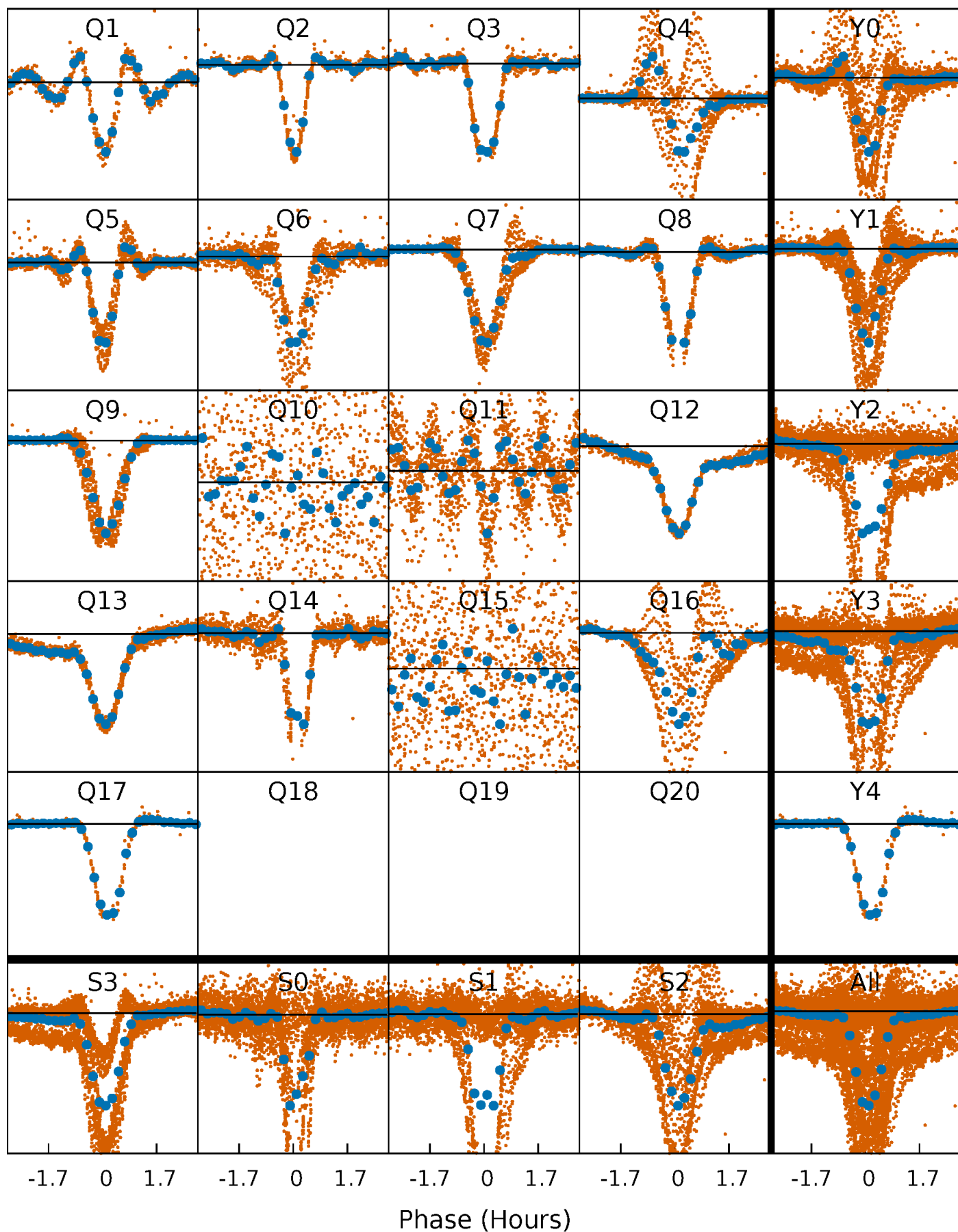
PDC Quarter-Phased Transit Curves

TCE 008094140-02 P= 0.706425 Days $T_0=131.792244$ (BKJD)



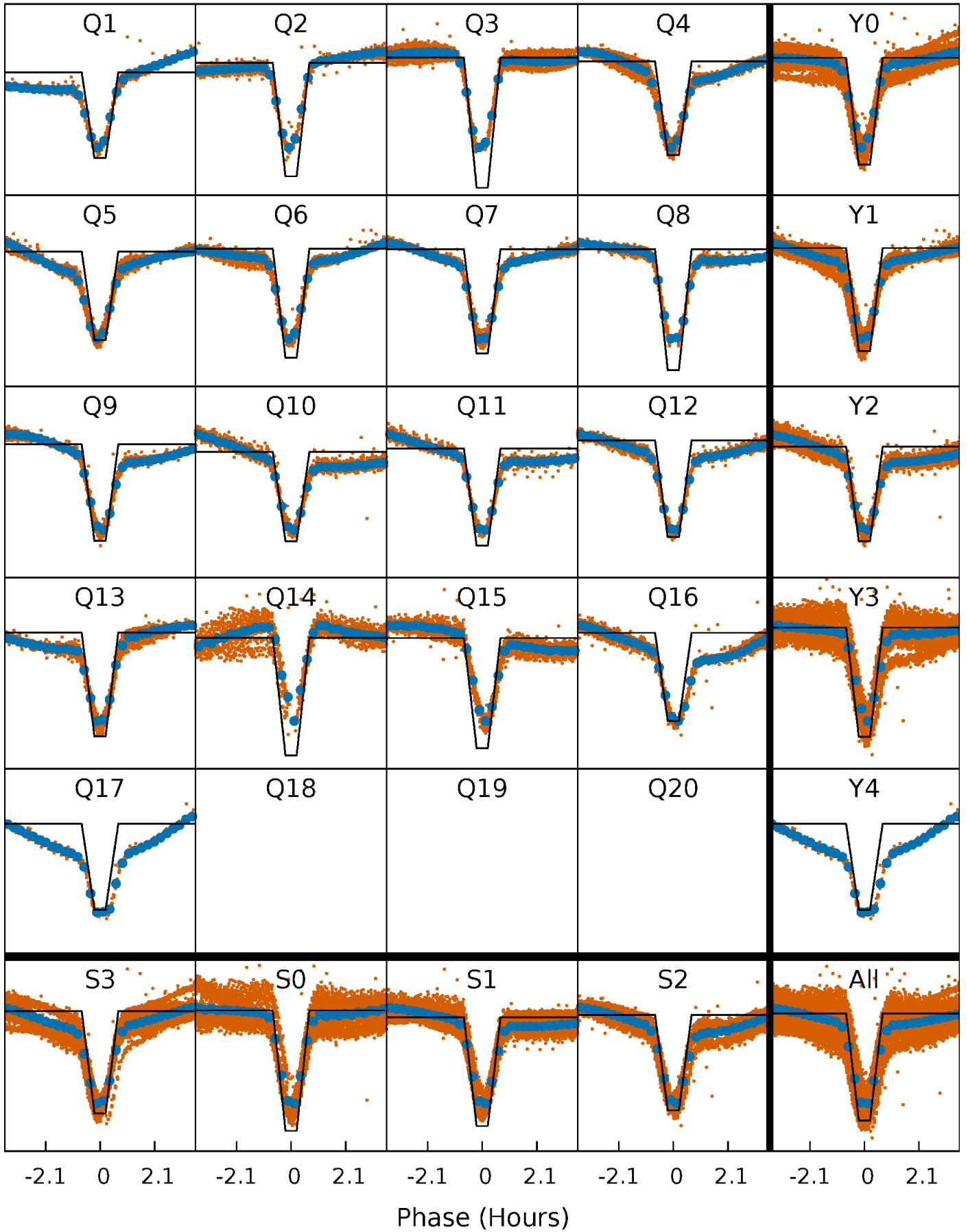
DV Quarter-Phased Transit Curves

TCE 008094140-02 P= 0.706425 Days $T_0=131.792244$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

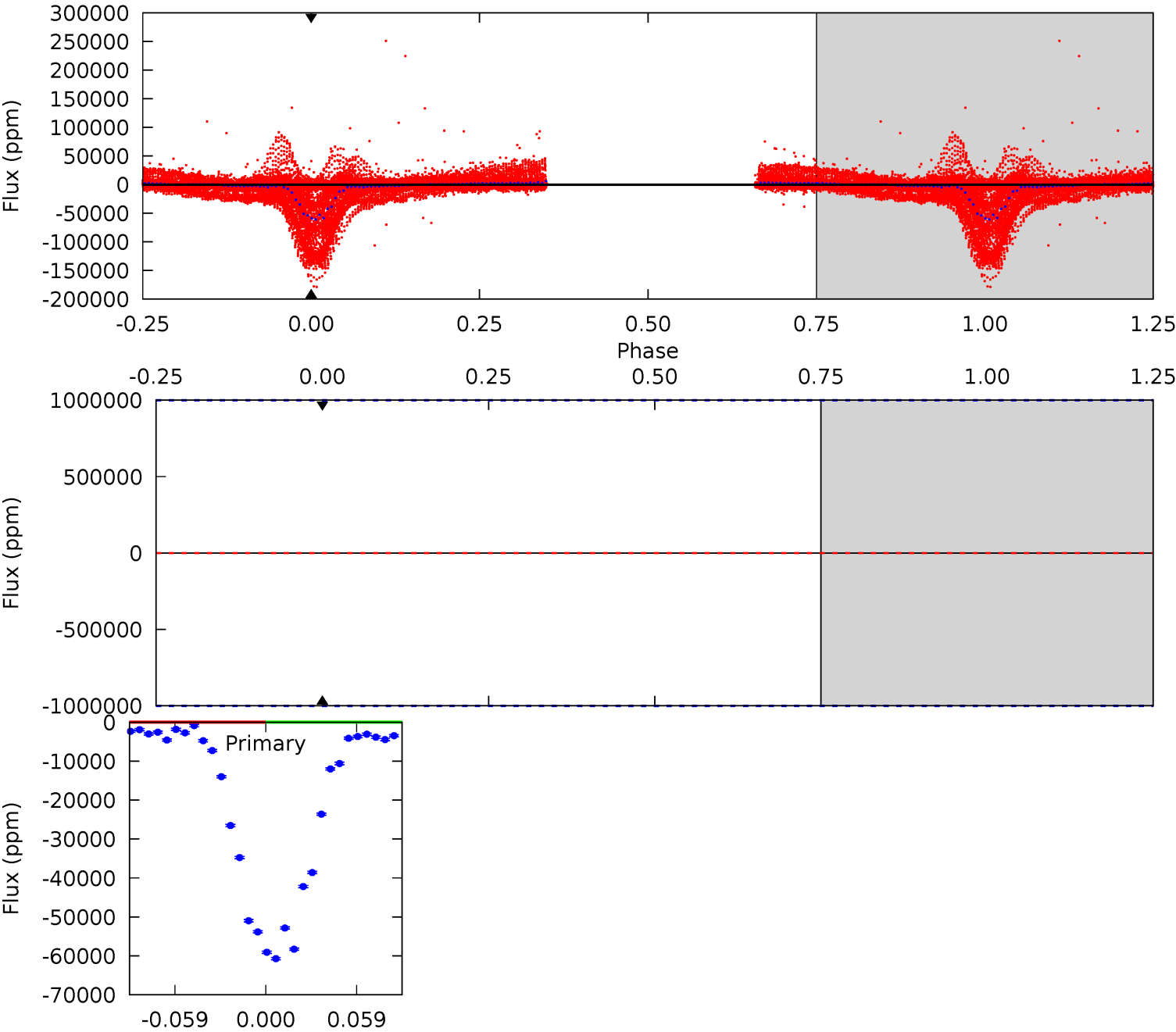
TCE 008094140-02 P= 0.706425 Days $T_0=131.796013$ (BKJD)



DV Model-Shift Uniqueness Test

008094140-02, P = 0.706425 Days, E = 131.085819 Days

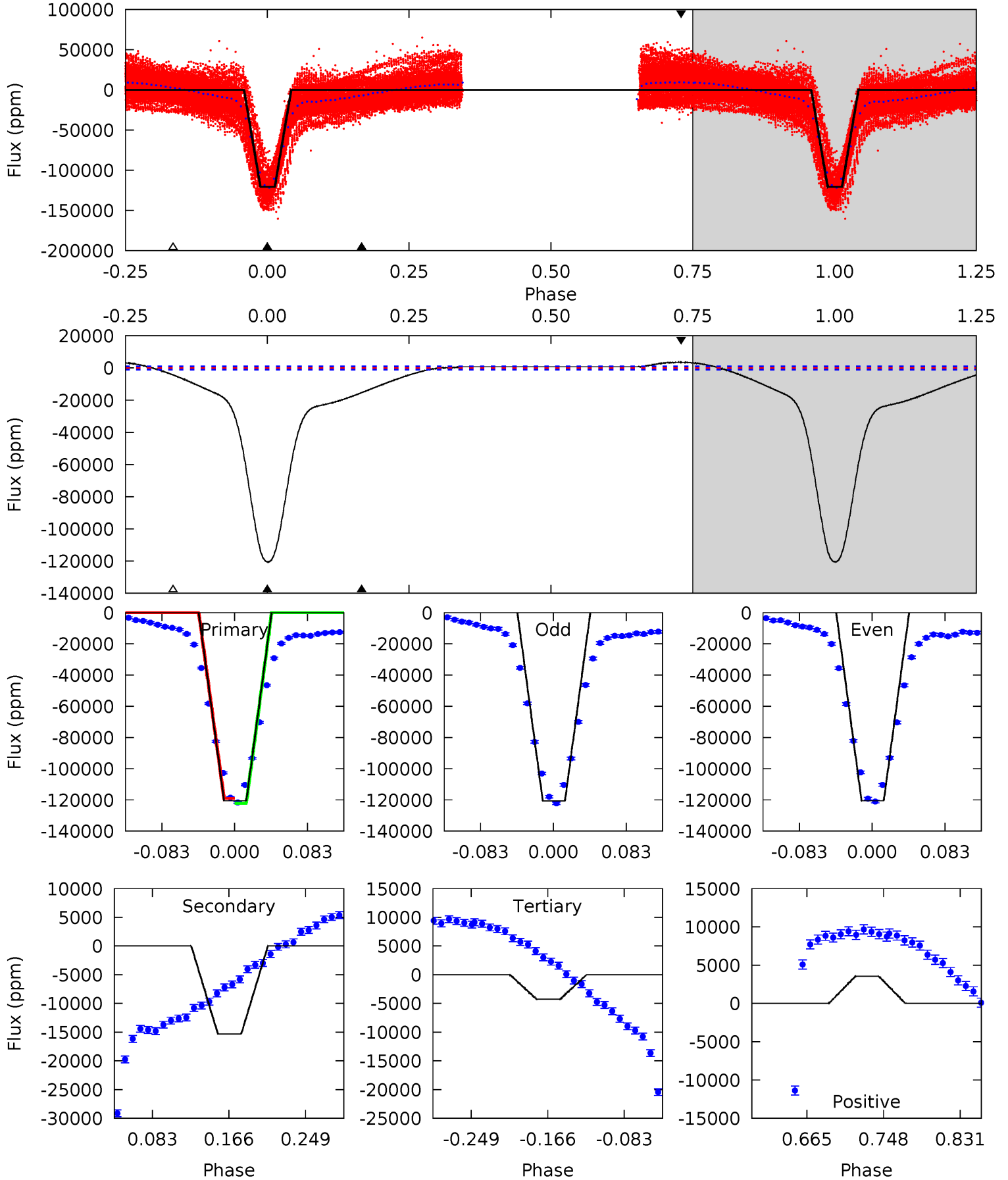
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

008094140-02, P = 0.706425 Days, E = 131.089588 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
559.9	71.0	19.8	16.4	4.60	1.73	25.3	540.1	543.5	51.2	54.6	0.20	0.99	0.03	7.61



Stellar Parameters For KIC 008094140

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4429^{+154}_{-154}	$4.569^{+0.060}_{-0.016}$	$0.420^{+0.050}_{-0.300}$	$0.736^{+0.025}_{-0.059}$	$0.733^{+0.037}_{-0.046}$	$2.590^{+0.644}_{-0.174}$
	+3%/-3%	+1%/-0%	+12%/-71%	+3%/-8%	+5%/-6%	+25%/-7%
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 008094140-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	0 ± 1000000	$15.11^{+7.59}_{-7.19}$	1967^{+74}_{-70}	3007^{+3068}_{-8564}	$1.866^{+74.740}_{-48.710}$
Alt.	-15293 ± 215	$29.01^{+8.23}_{-7.73}$	1966^{+72}_{-77}	3024^{+326}_{-251}	$2.000^{+1.629}_{-0.791}$

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

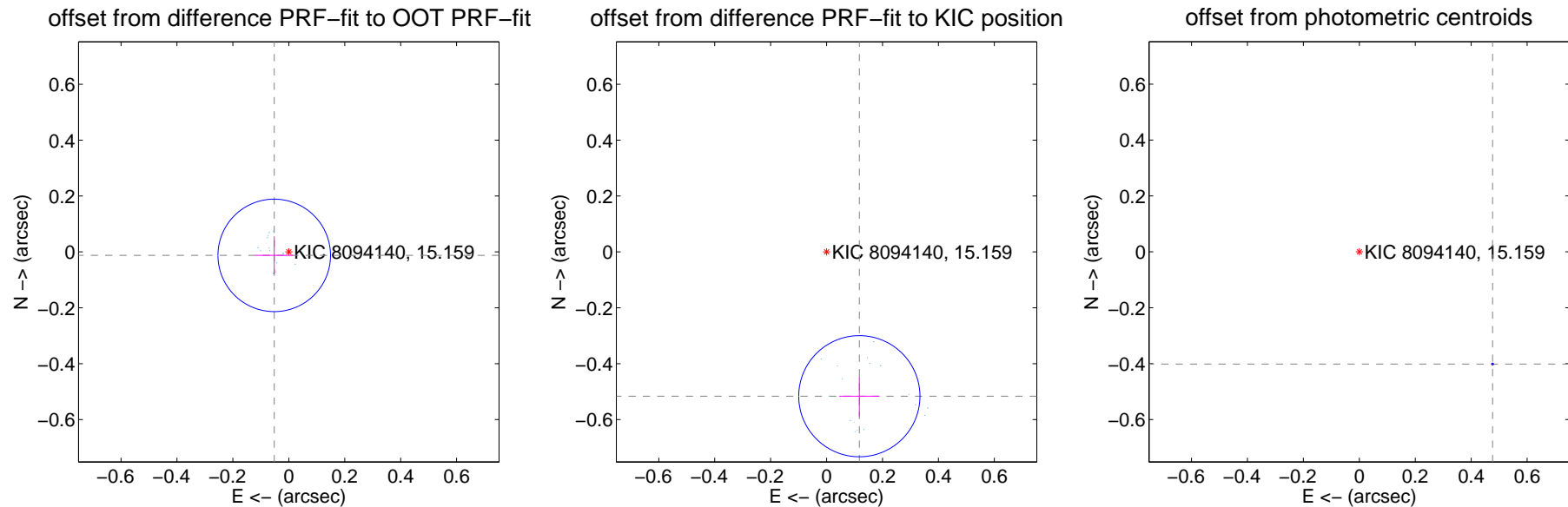
DV Centroid Data

Supplemental centroid analysis for 008094140-02. Kepler magnitude: 15.16. Transit SNR -1.00

There are 17 quarters with good PRF difference image offsets

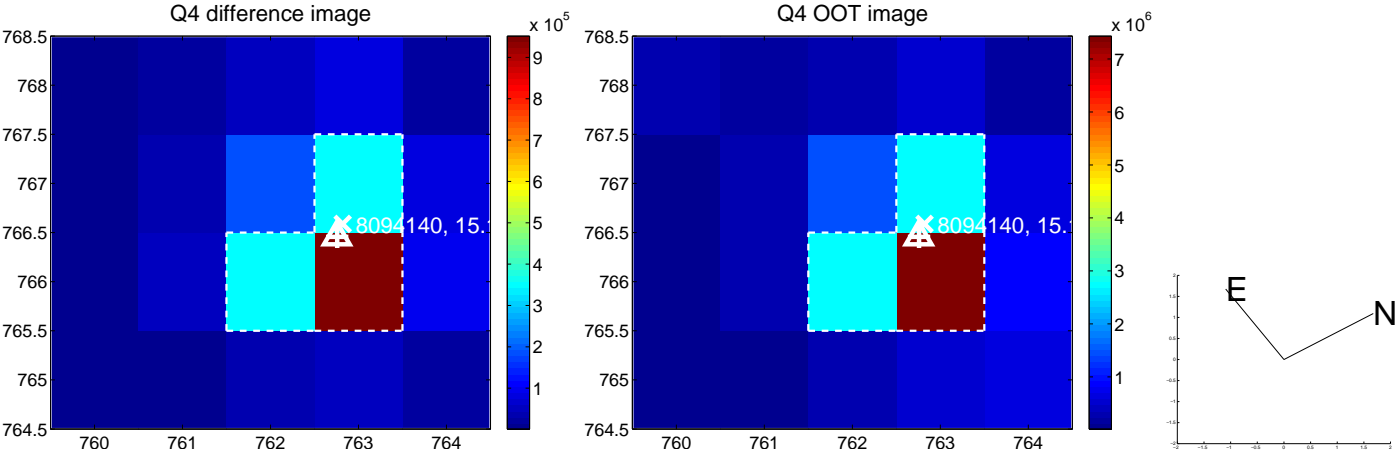
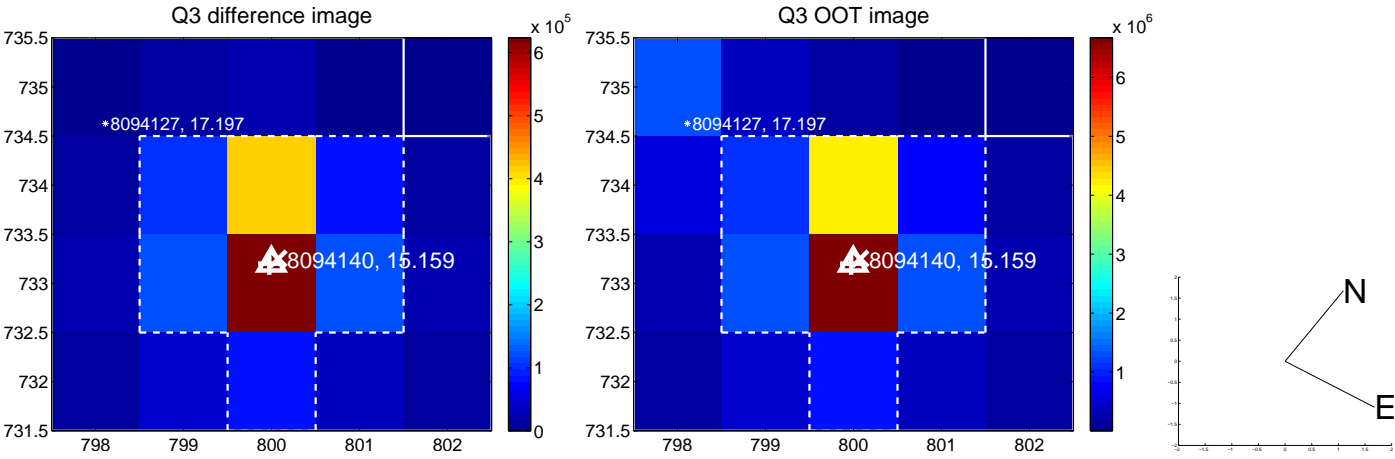
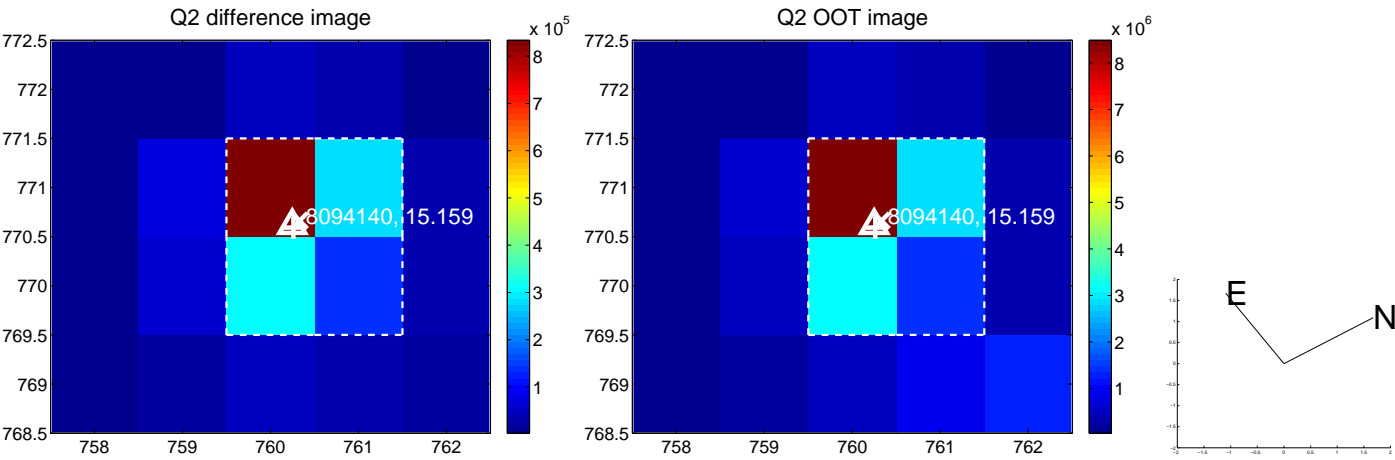
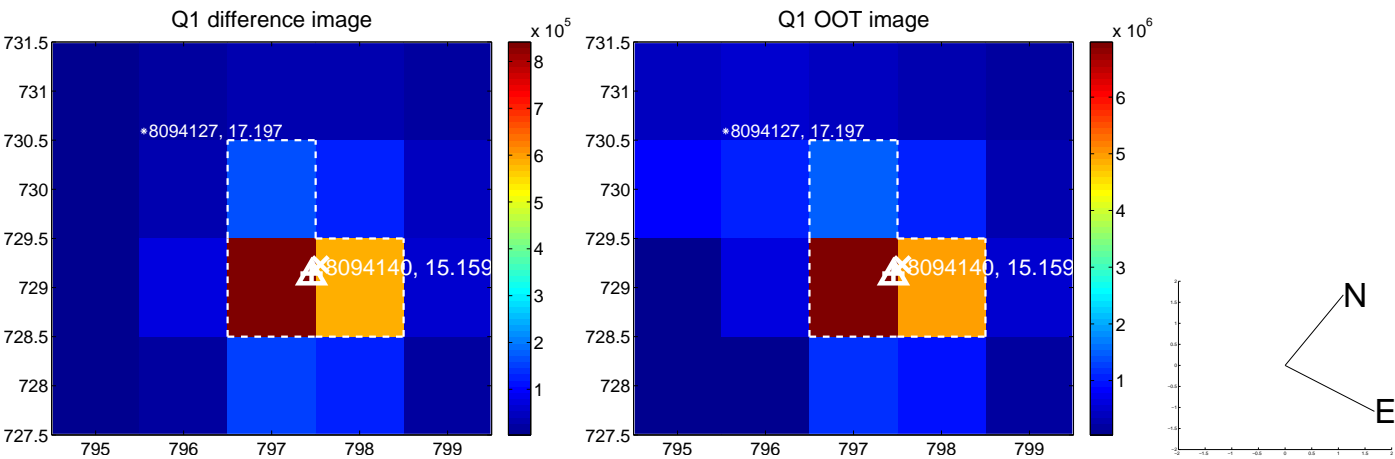
The direct PRF centroid is offset from the target star catalog position by about 0.62 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.054 ± 0.067	0.80	0.052 ± 0.067	-0.012 ± 0.068
PRF-fit source offset from KIC position	0.530 ± 0.072	7.33	-0.117 ± 0.072	-0.516 ± 0.072
photometric centroid source offset	0.62 ± 0.00	563.93	-0.48 ± 0.00	-0.40 ± 0.00

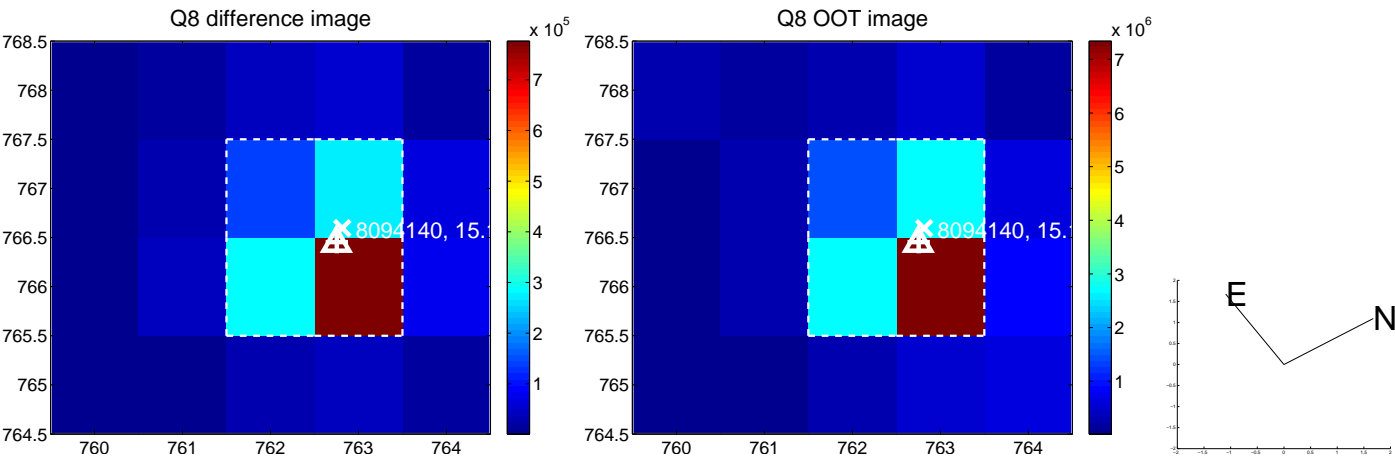
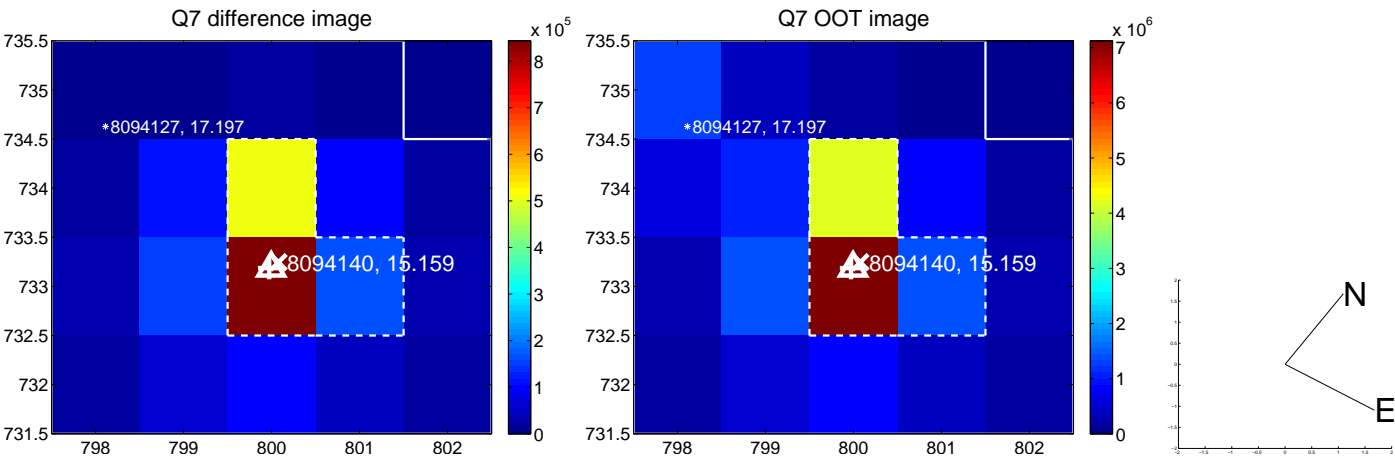
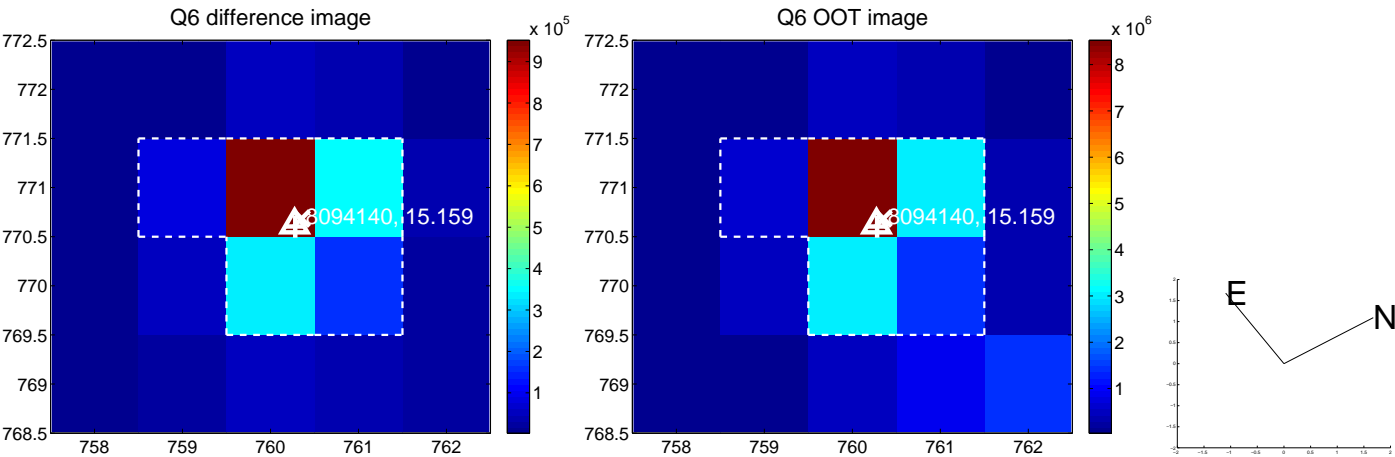
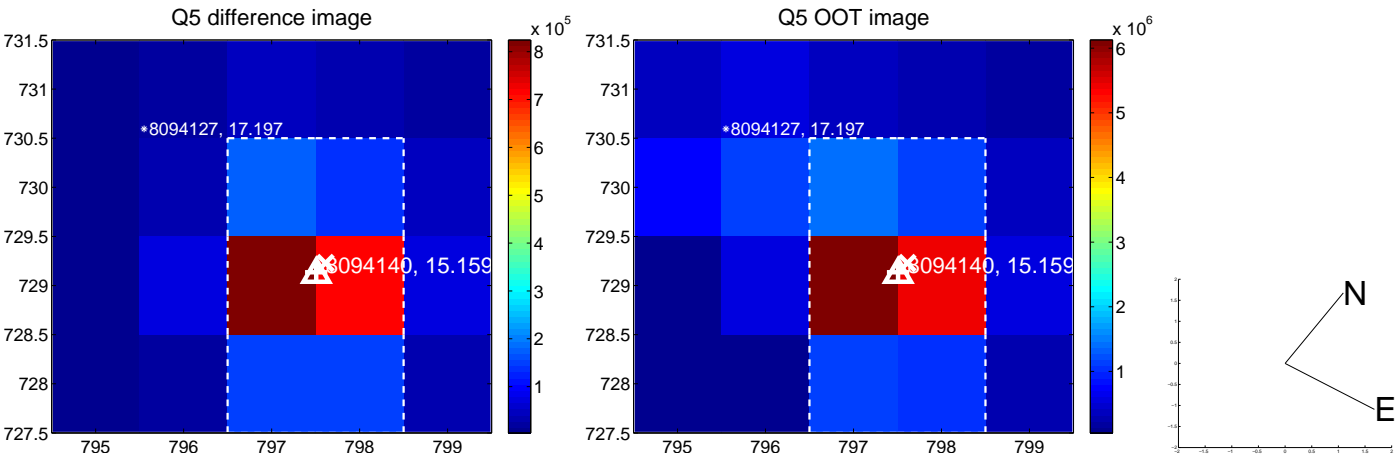


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

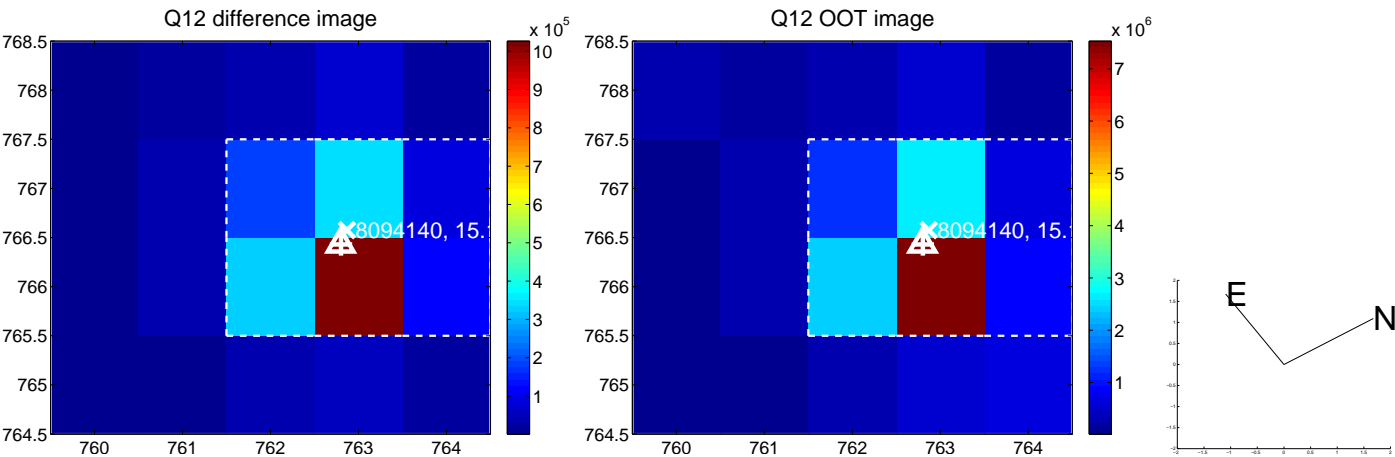
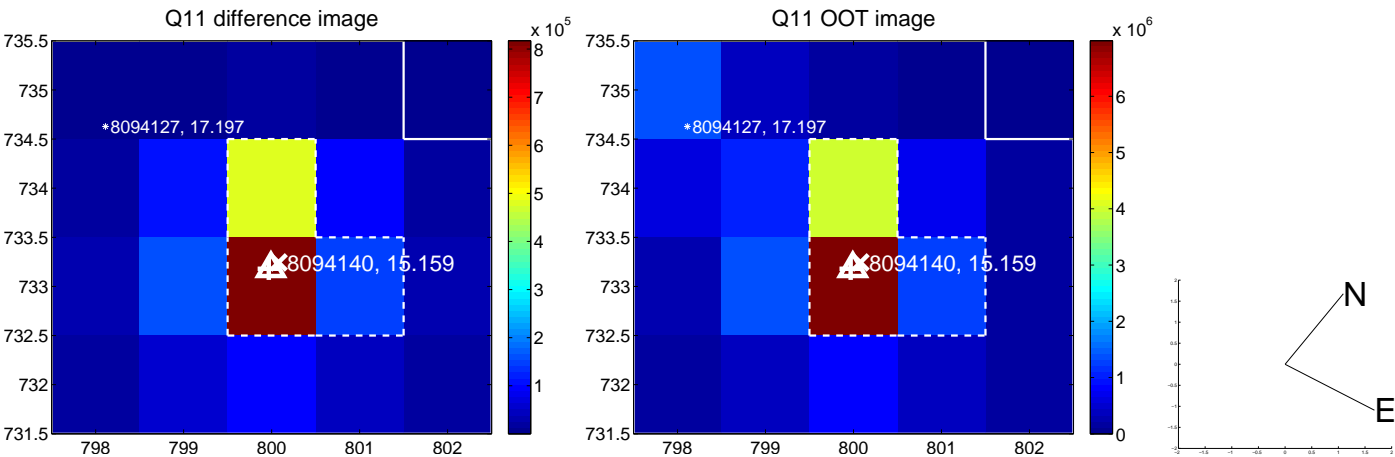
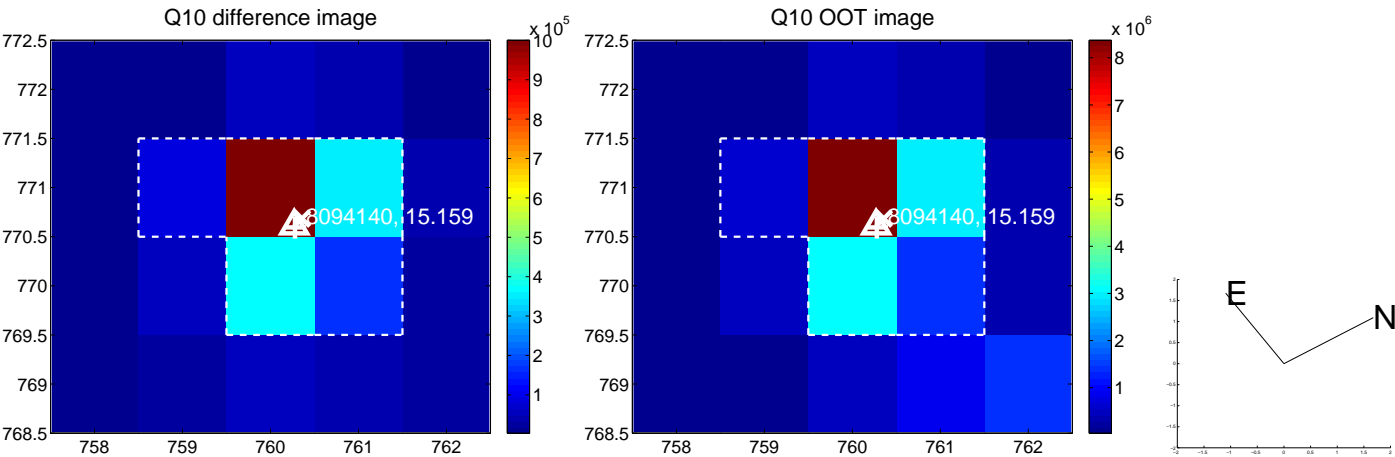
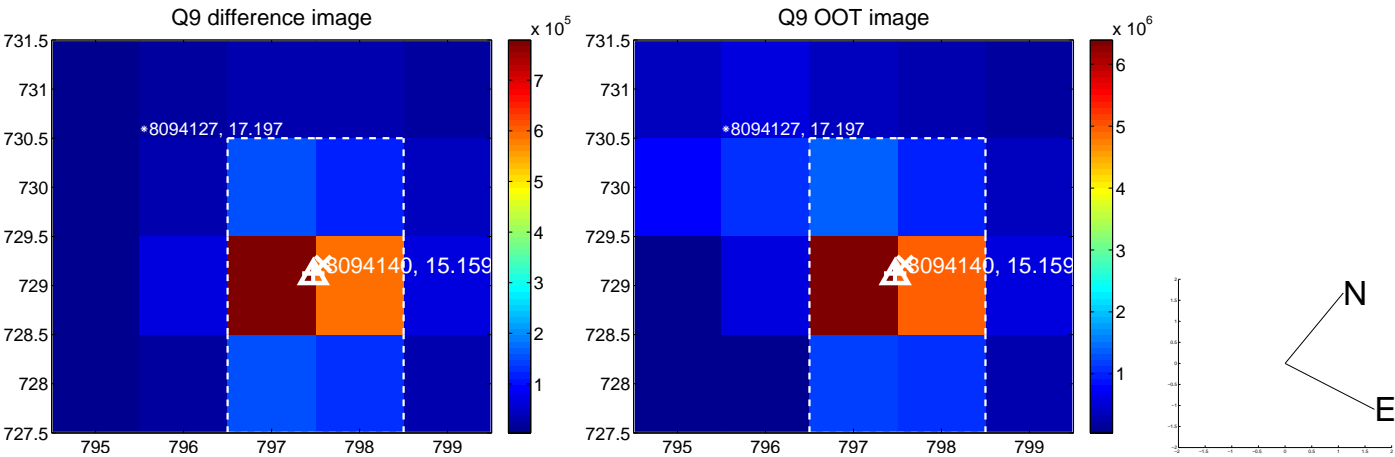
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



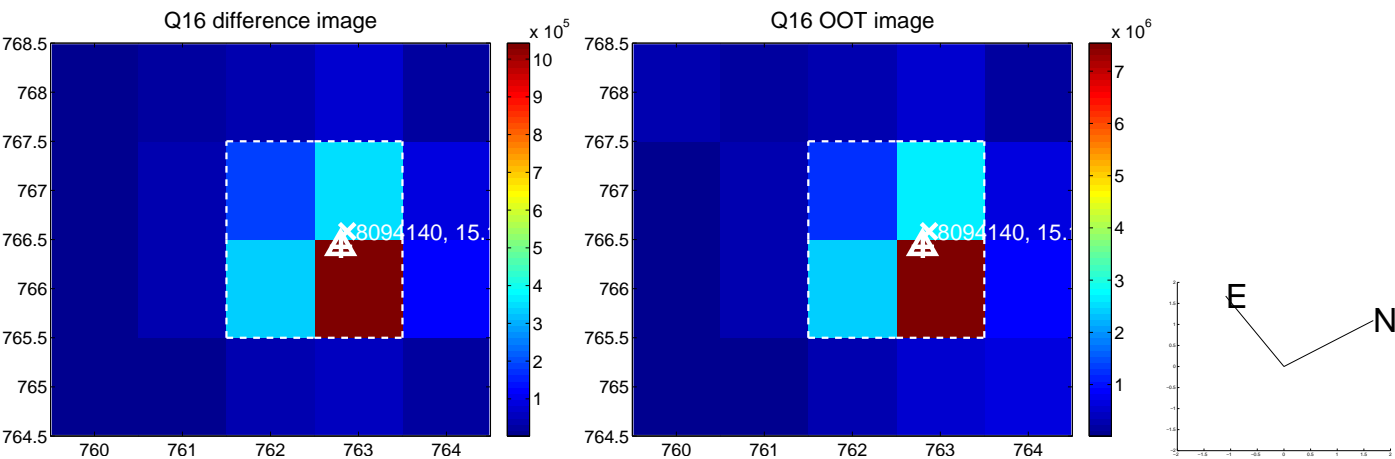
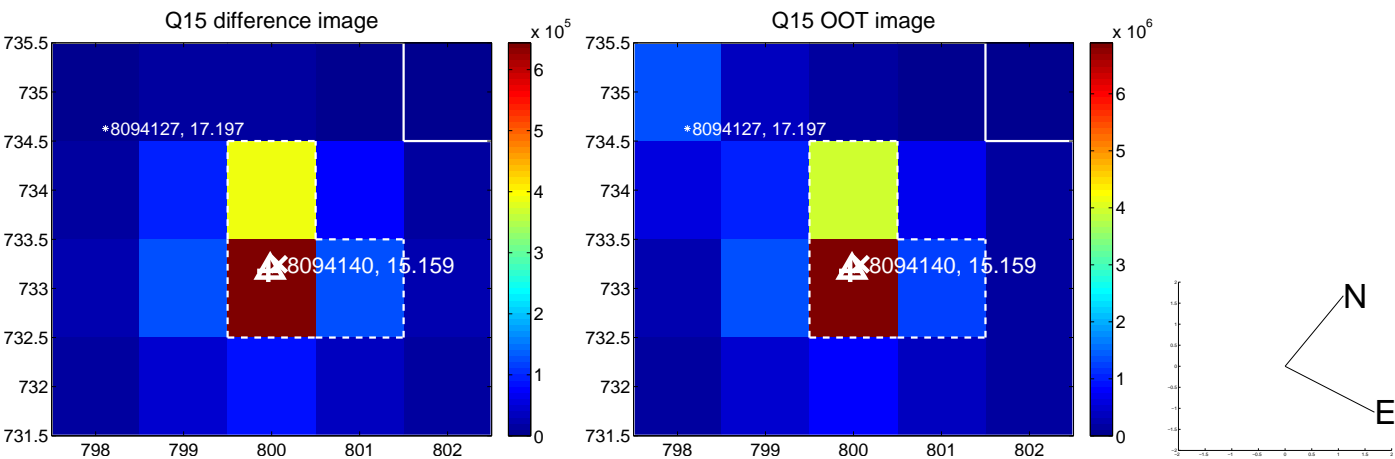
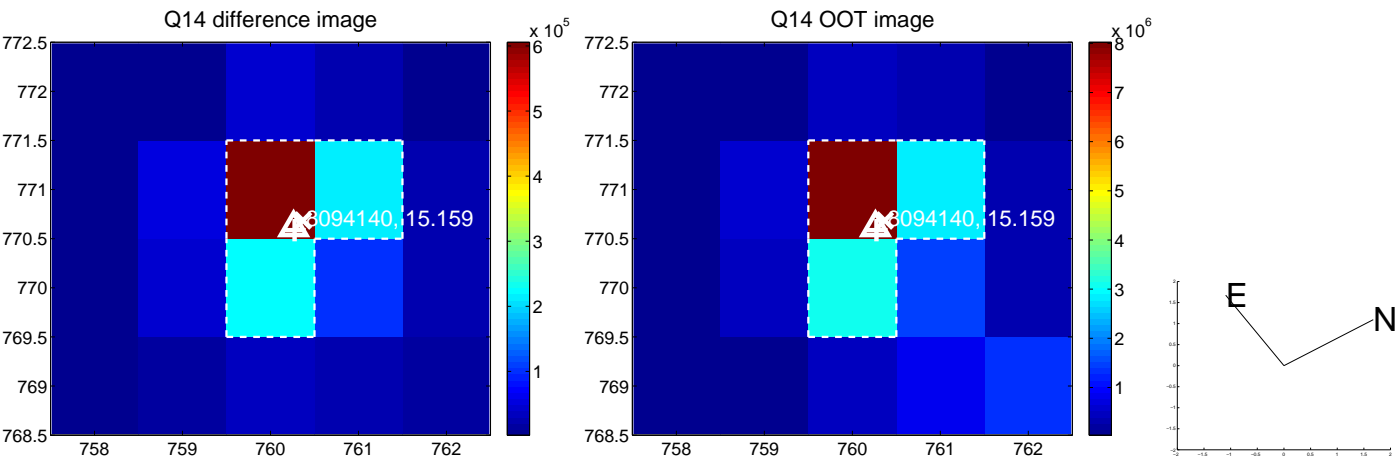
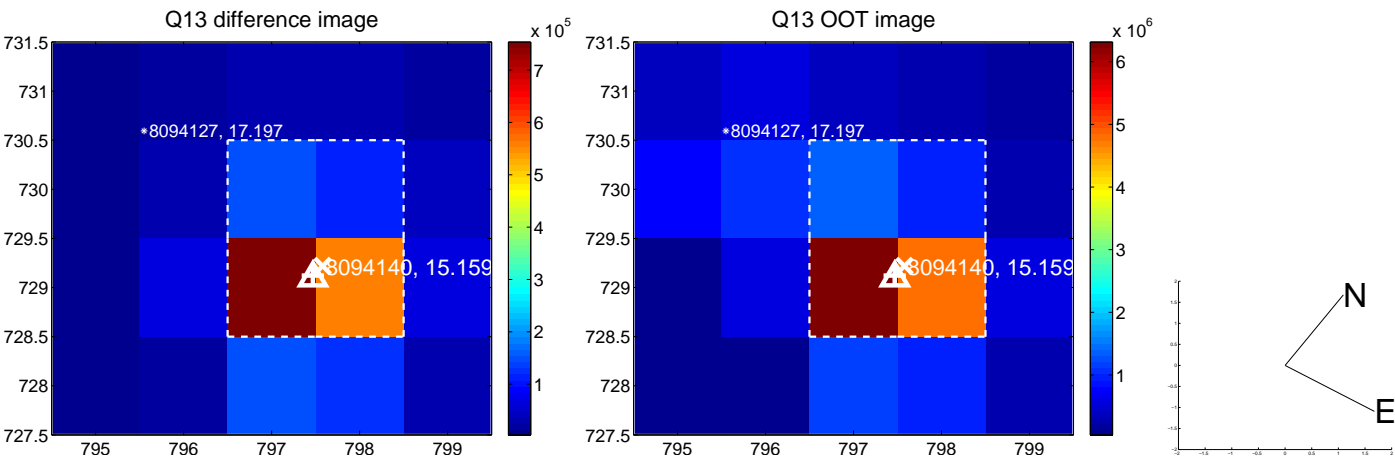
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



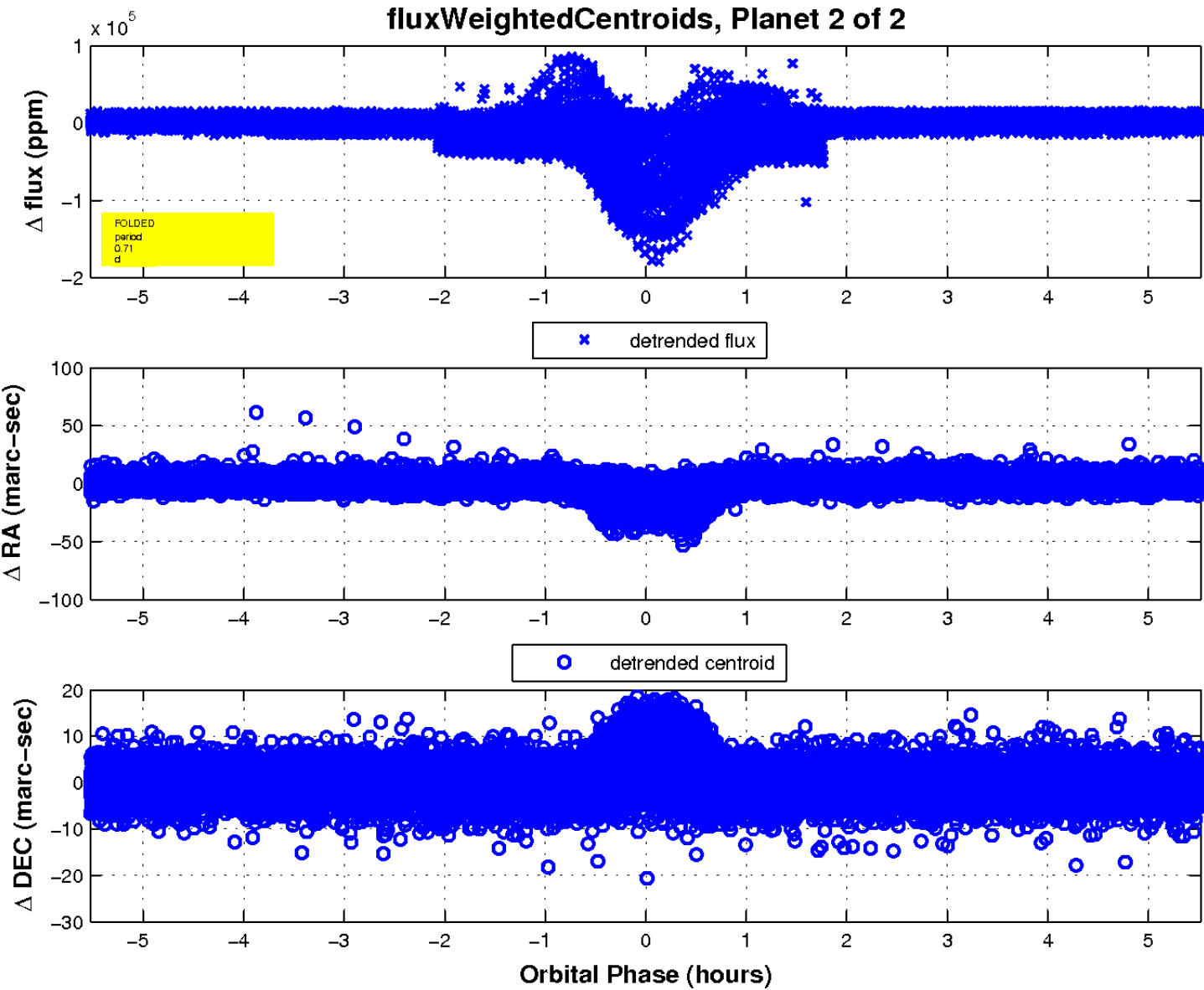
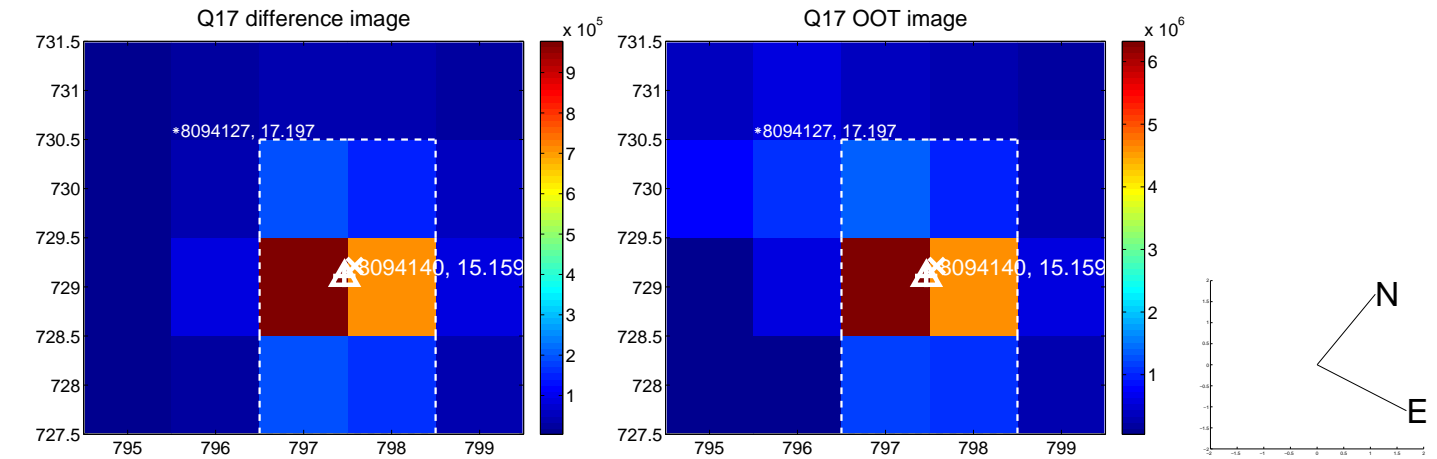
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image

Declination

