

KIC 005647974

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})
005647974-01	OBS	No	1.716273	132.559047	3.3	5.533	8.4	7.1	1.93	8425	0.41	14756.39
005647974-02	OBS	No	160.128461	204.610035	17.8	10.521	38.9	2.1	1.93	8425	0.90	34.87

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005647974-01	OBS	FP	0.00	1	0	0	0	LPP_DV—CENT_SATURATED
005647974-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_SATURATED

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

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

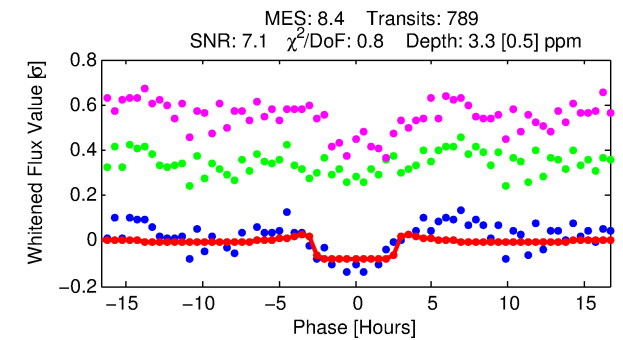
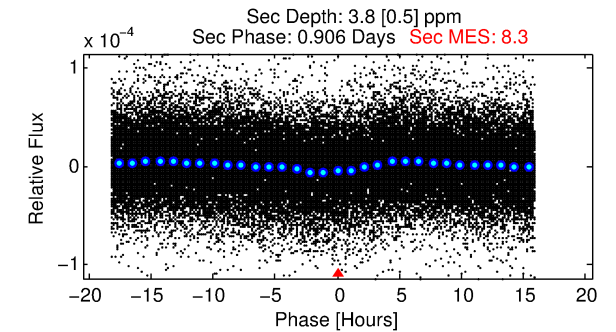
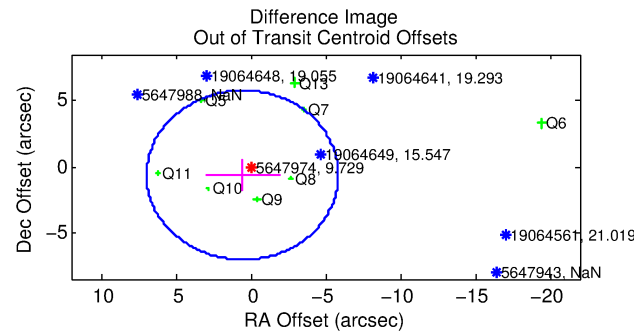
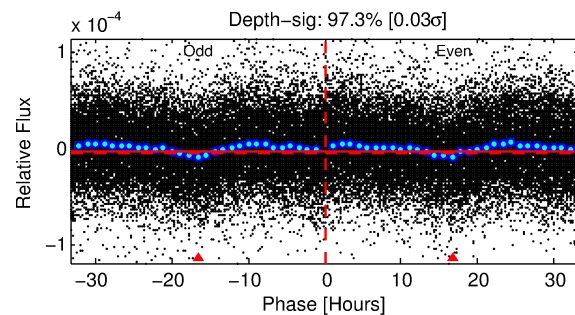
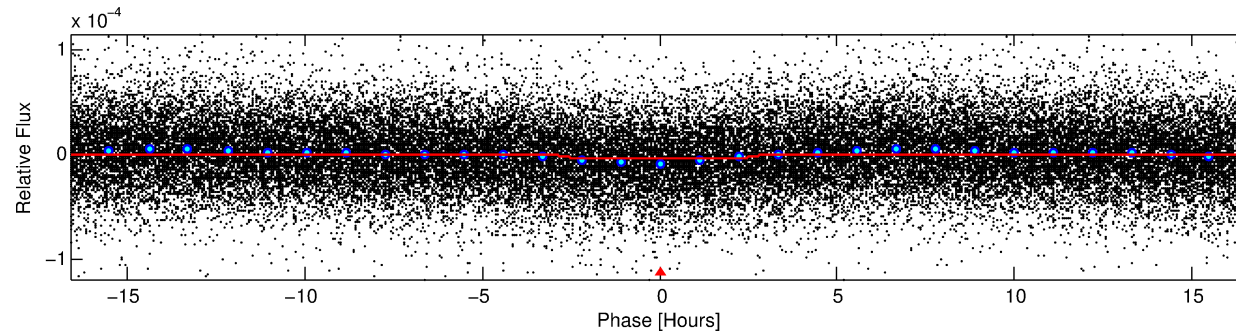
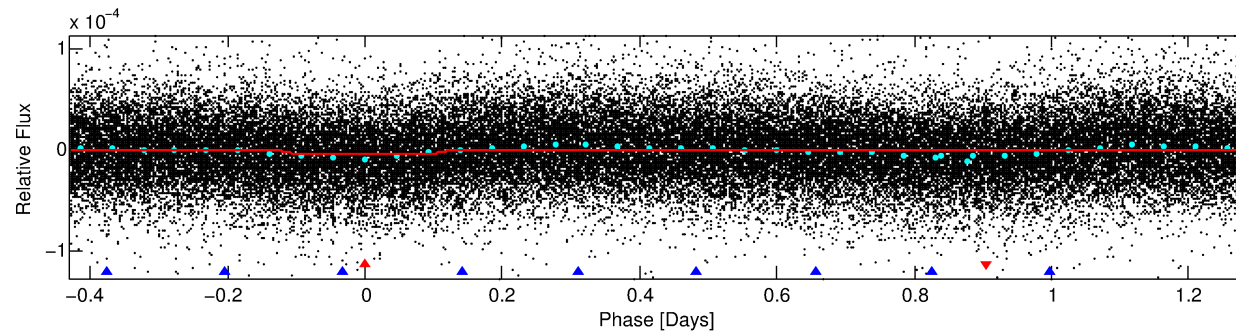
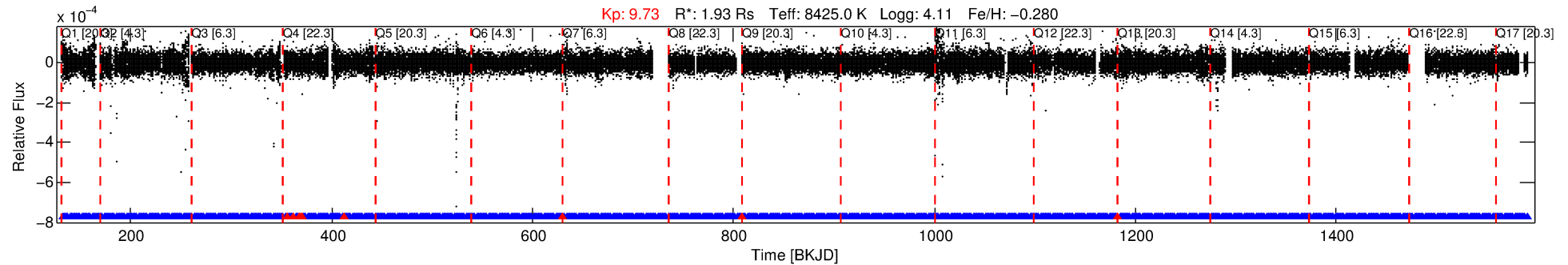
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005647974-01

No Significant Match Found

DV One-Page Summary

KIC: 5647974 Candidate: 1 of 2 Period: 1.716 d



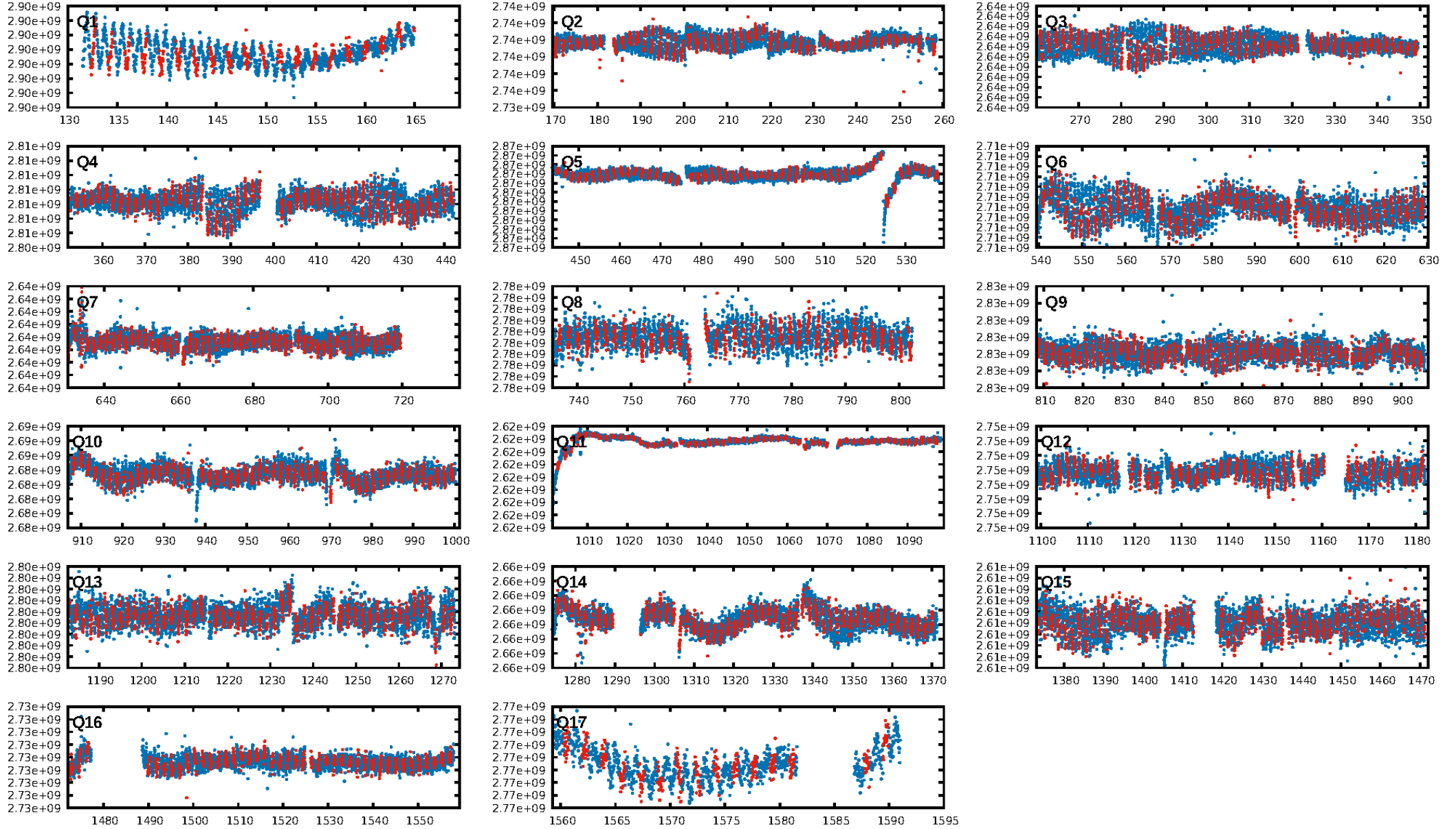
DV Fit Results:

Period = 1.71627 [0.00002] d
Epoch = 132.5590 [0.0055] BKJD
 $R_p/R^* = 0.0019$ [0.0003]
 $a/R^* = 1.40$ [0.49]
 $b = 0.90$ [0.15]
 $\text{Seff} = 14756.38$ [4632.29]
 $T_{\text{eq}} = 2810$ [221] K
 $R_p = 0.41$ [0.10] R_e
 $a = 0.0337$ [0.0062] AU
 $A_g = 14.33$ [5.65] [2.36 σ]
 $T_{\text{eff}} = 8454$ [711] K [7.58 σ]

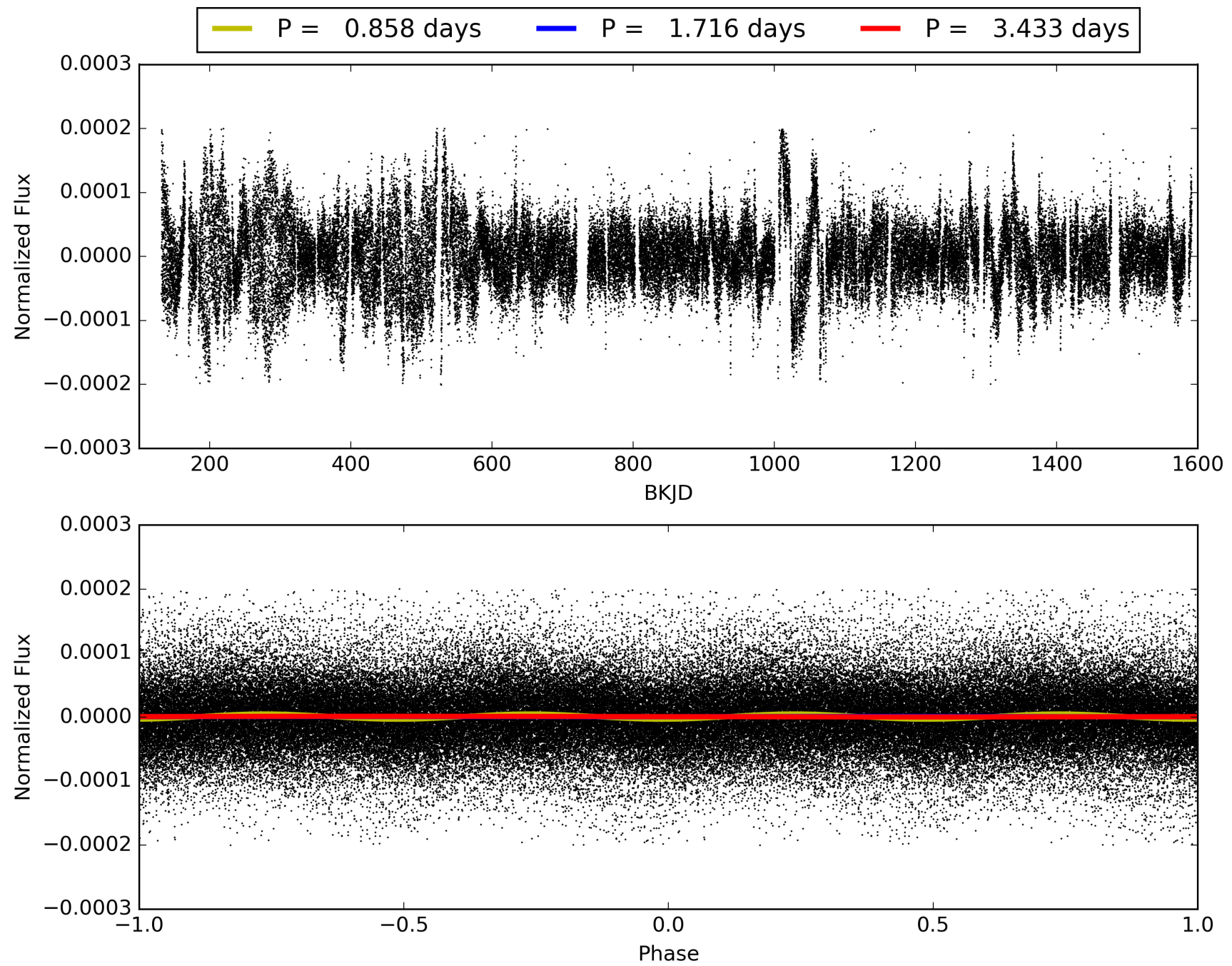
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [319.82 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 3.58e-13
RollingBand-fgt: 0.99 [746/755]
GhostDiagnostic-chr: N/A
Centroid-sig: N/A
Centroid-so: N/A
OotOffset-rm: 0.841 arcsec [0.39 σ]
OotOffset-st: 2/2/1/3 [8]
KicOffset-rm: 0.706 arcsec [0.32 σ]
KicOffset-st: 2/2/1/3 [8]
DiffImageQuality-fgm: 0.12 [1/8]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 005647974-01, PDC Light Curves

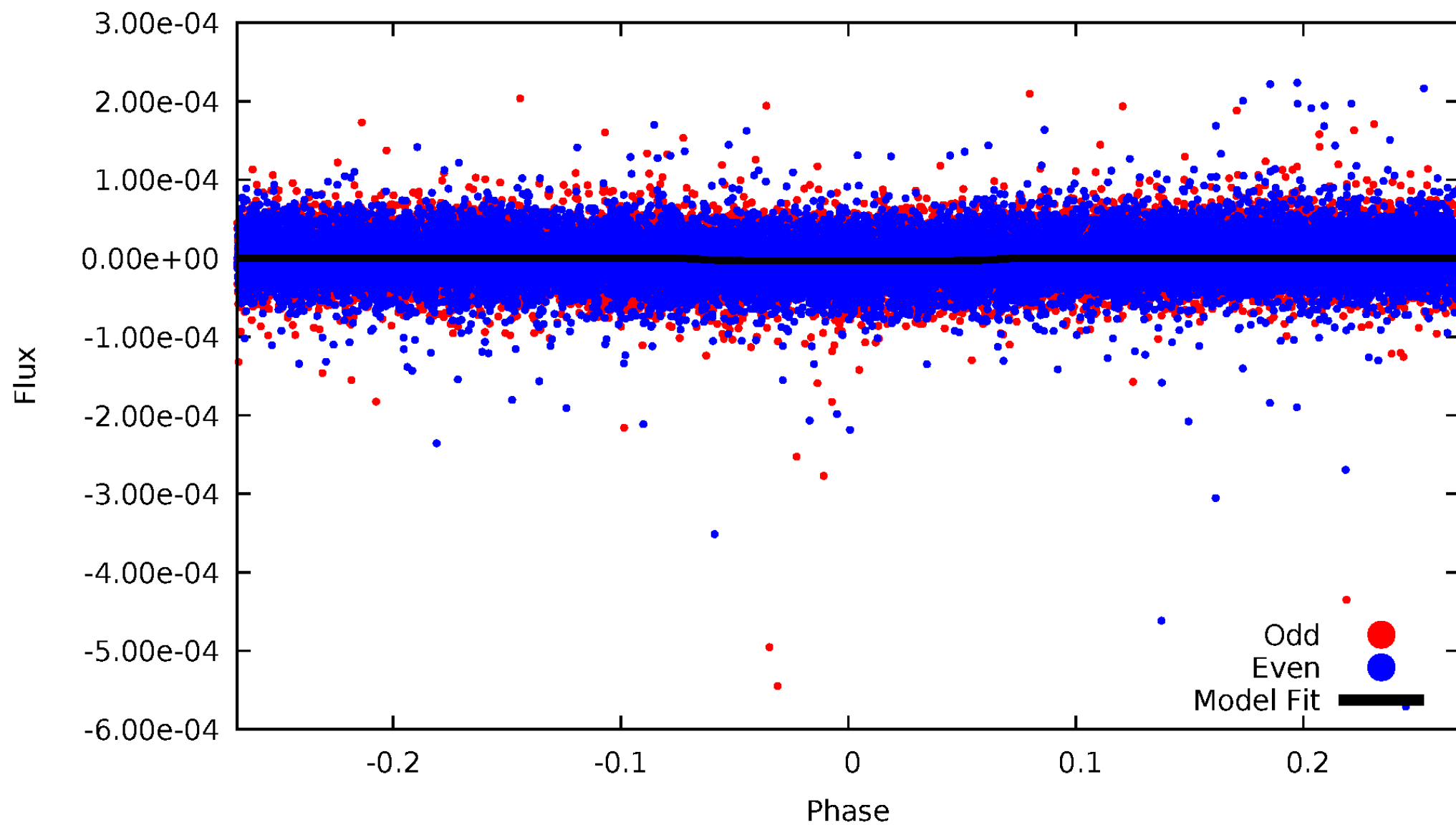


TCE 005647974-01



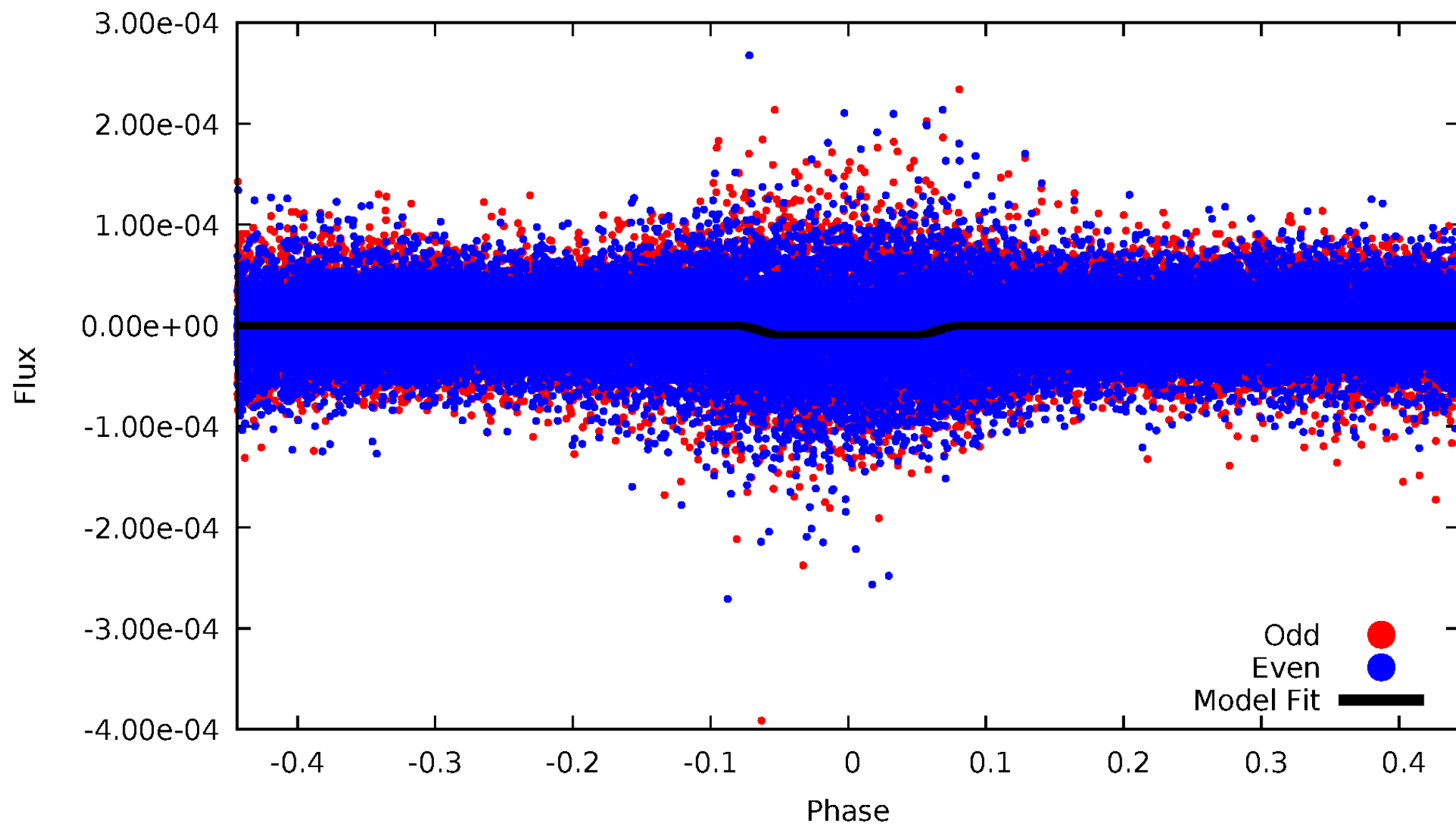
DV Odd/Even

TCE 005647974-01



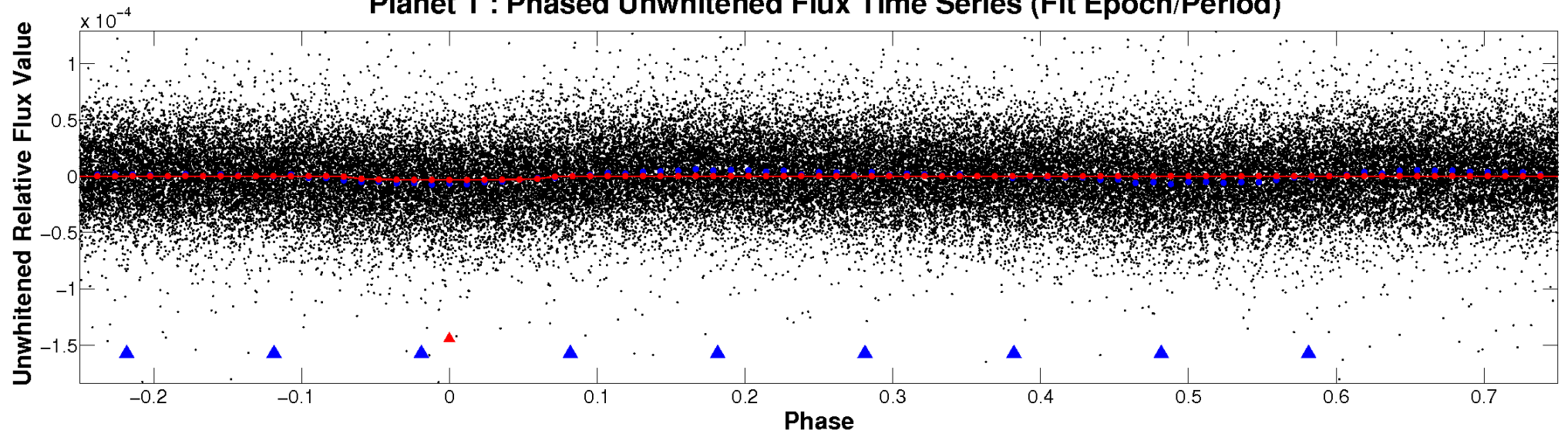
ALT Odd/Even

TCE 005647974-01

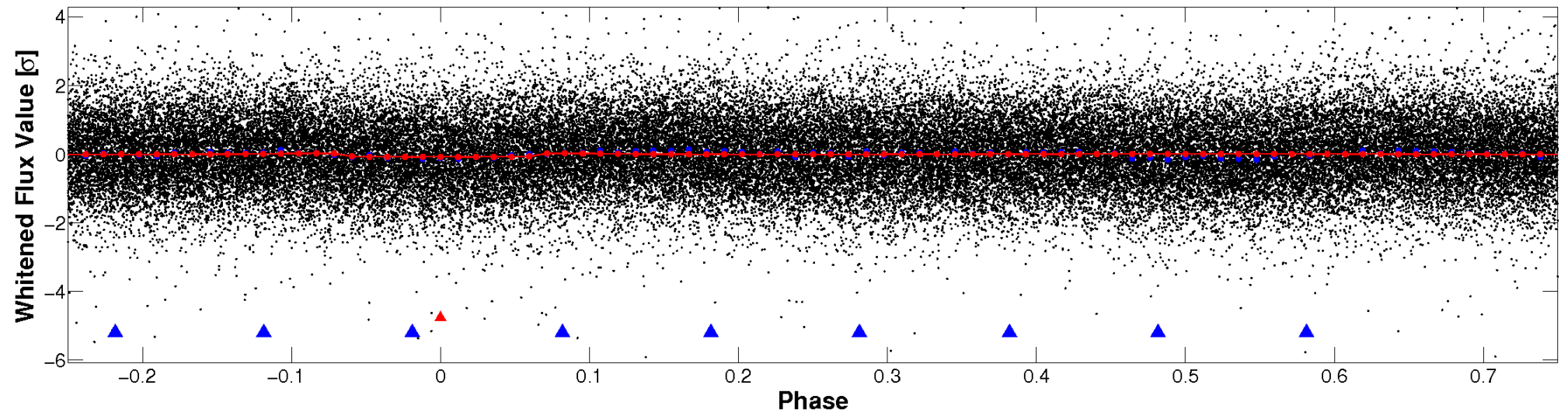


Non-Whitened Vs. Whitened Light Curve

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

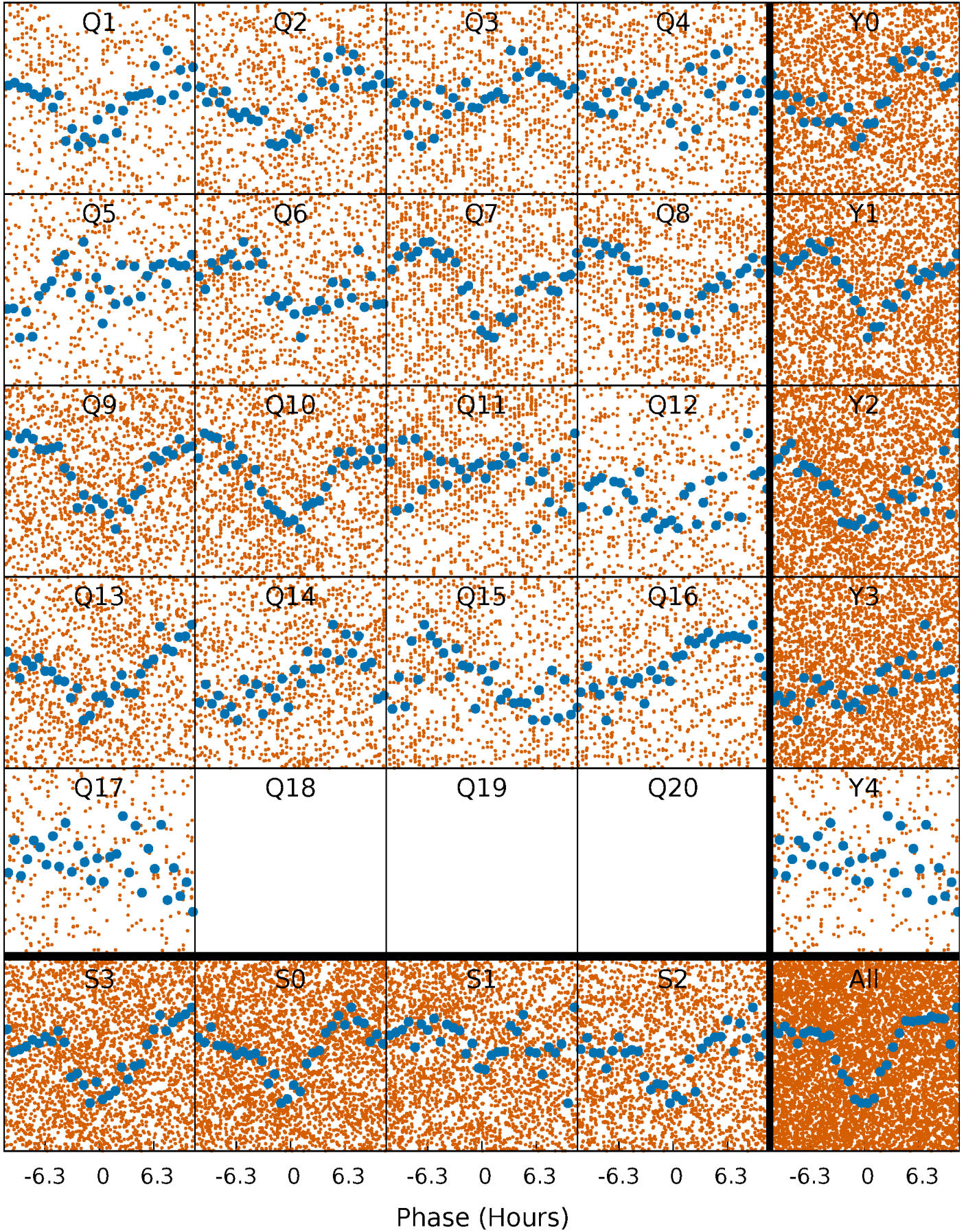


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



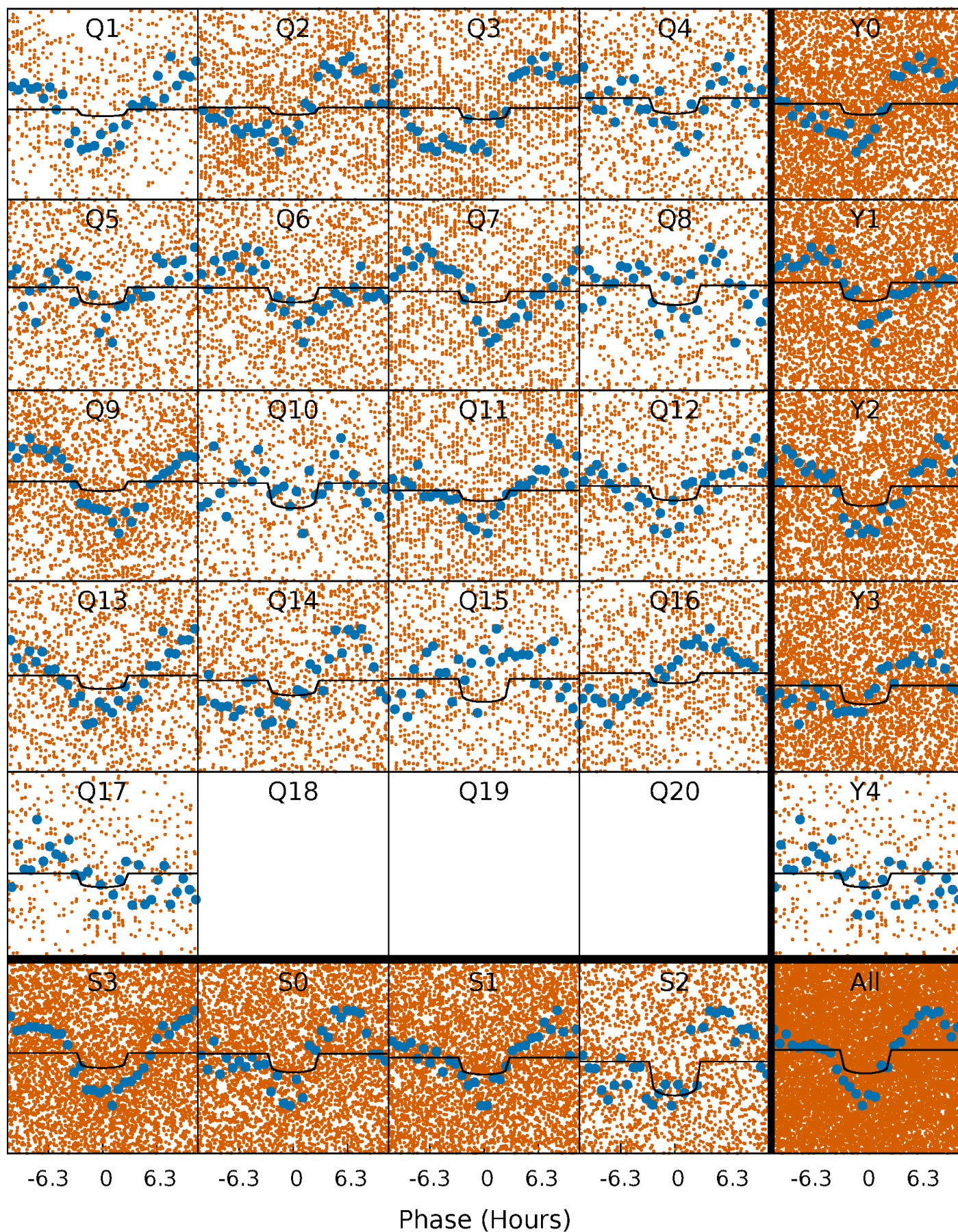
PDC Quarter-Phased Transit Curves

TCE 005647974-01 P= 1.716273 Days $T_0=132.559047$ (BKJD)



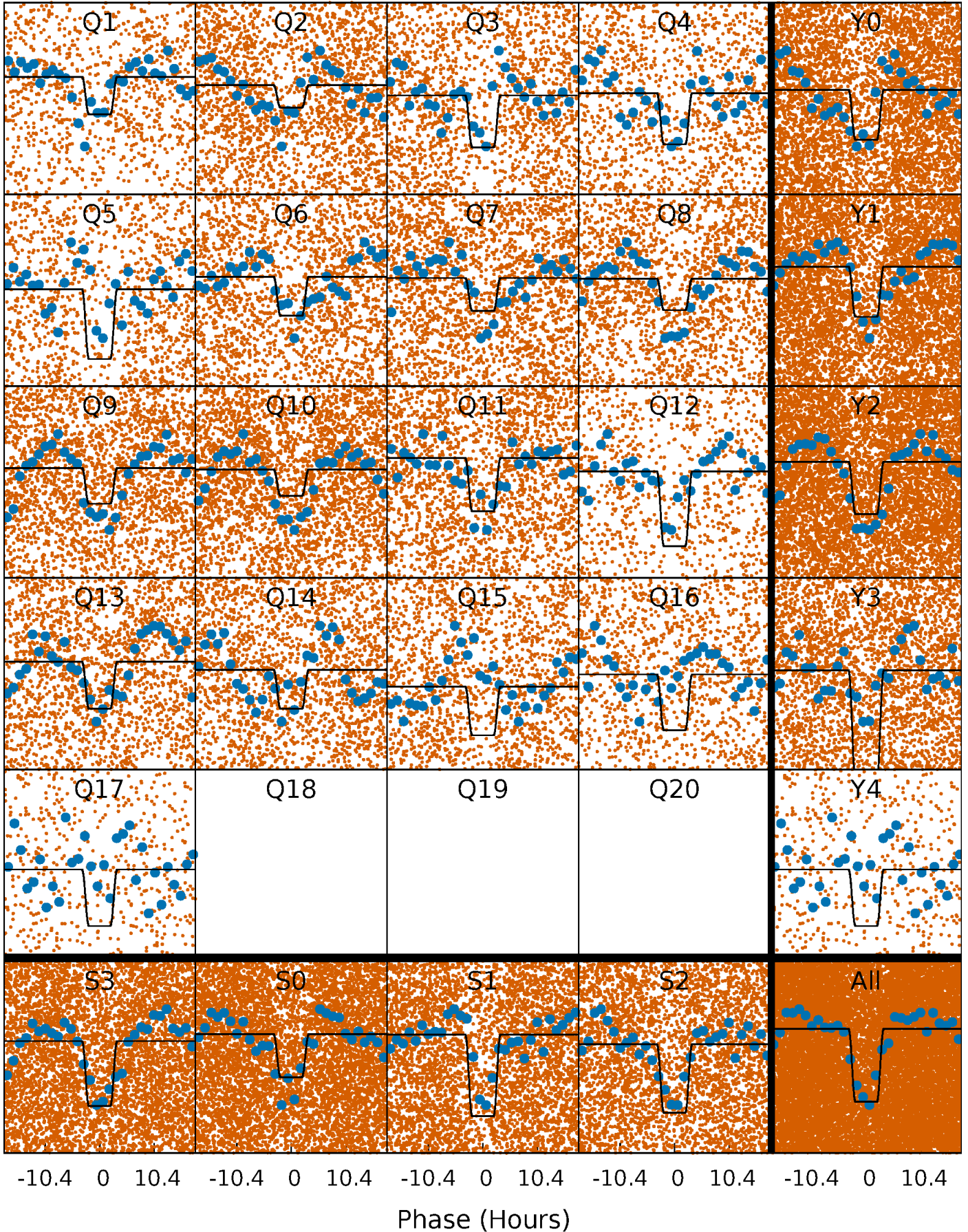
DV Quarter-Phased Transit Curves

TCE 005647974-01 P= 1.716273 Days $T_0=132.559047$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

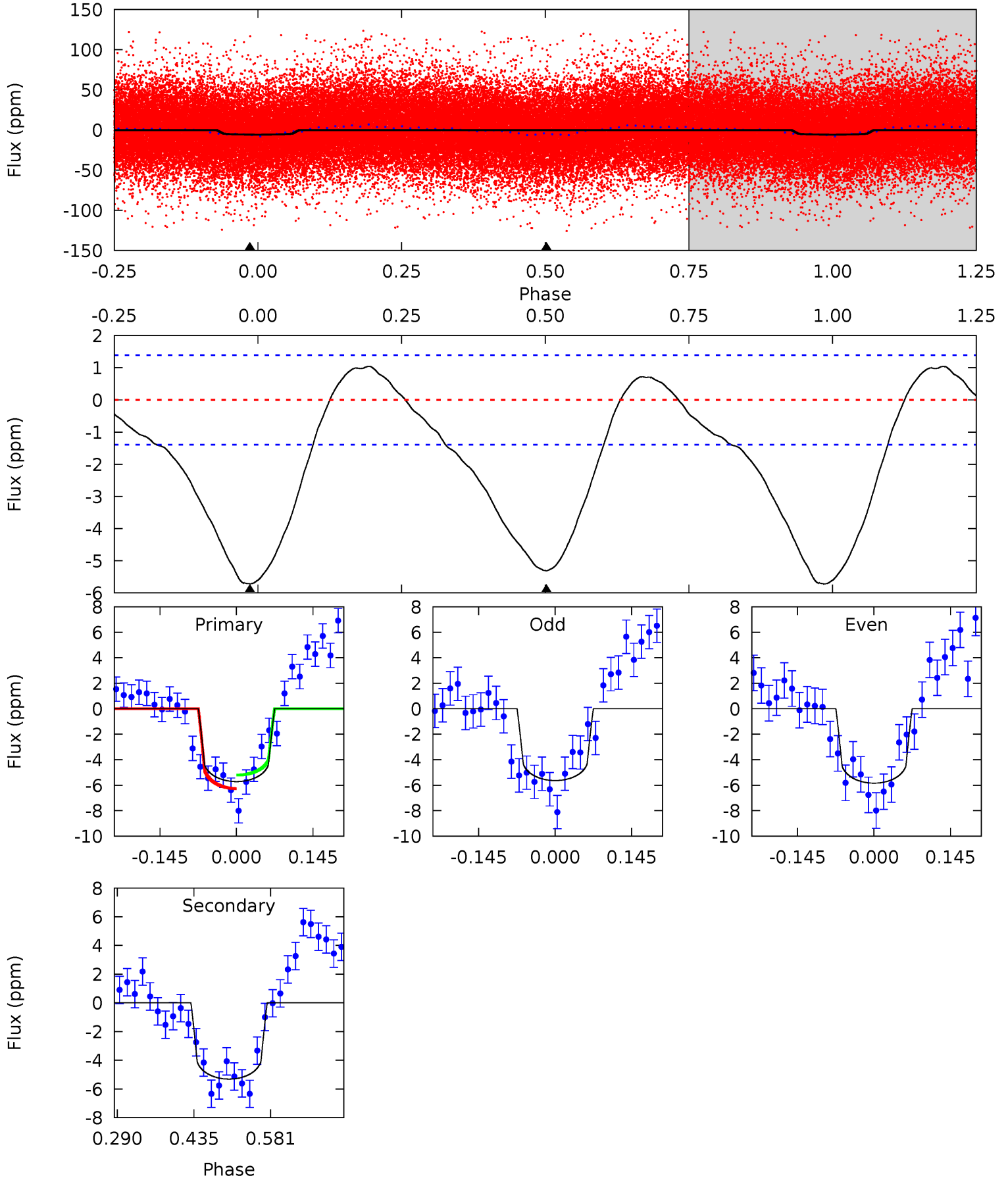
TCE 005647974-01 P= 1.716149 Days $T_0=132.611643$ (BKJD)



DV Model-Shift Uniqueness Test

005647974-01, P = 1.716273 Days, E = 130.842774 Days

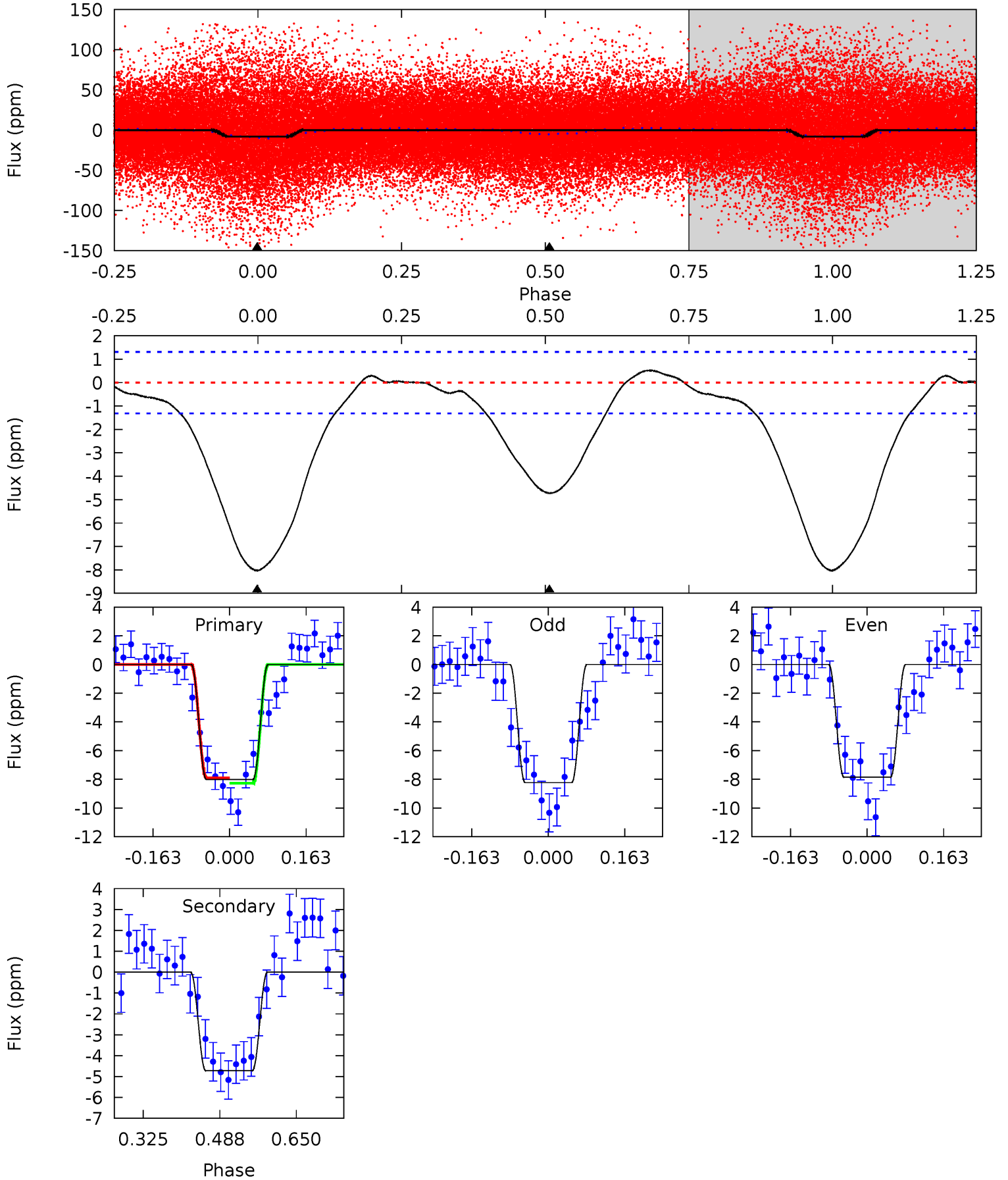
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.5	17.1	0	0	4.49	1.46	2.81	18.5	18.5	17.1	17.1	0.33	1.14	0.15	1.71



Alt Model-Shift Uniqueness Test

005647974-01, P = 1.716149 Days, E = 130.895494 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
27.3	16.1	0	0	4.46	1.40	1.19	27.3	27.3	16.1	16.1	0.64	0.83	0.06	0



Stellar Parameters For KIC 005647974

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	8425^{+235}_{-353}	$4.107^{+0.145}_{-0.145}$	$-0.280^{+0.300}_{-0.300}$	$1.927^{+0.418}_{-0.418}$	$1.734^{+0.166}_{-0.248}$	$0.341^{+0.252}_{-0.145}$
	+3%/-4%	+4%/-4%	+107%/-107%	+22%/-22%	+10%/-14%	+74%/-43%
Source	KIC0	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 005647974-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-5 ± 0	$0.41^{+0.08}_{-0.06}$	3929^{+268}_{-256}	9356^{+1087}_{-830}	20^{+8}_{-6}
Alt.	-5 ± 0	$0.62^{+0.10}_{-0.09}$	3907^{+249}_{-275}	6840^{+434}_{-384}	$7.470^{+2.586}_{-1.896}$

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 $A_{obs} \gg 1.0$

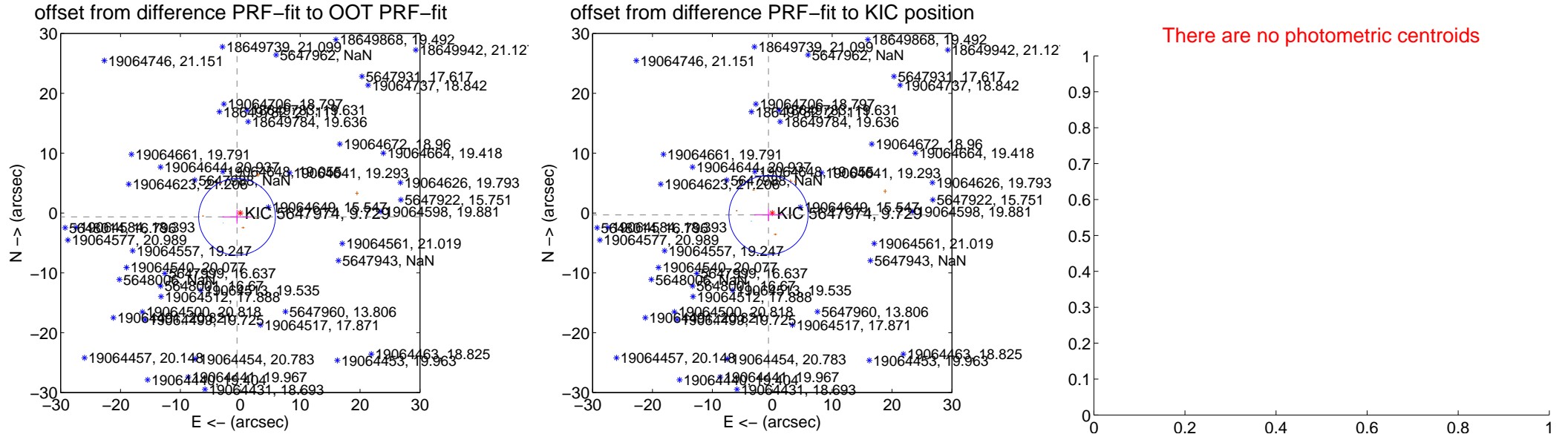
DV Centroid Data

Supplemental centroid analysis for 005647974-01. **Kepler magnitude: 9.73.** Transit SNR 7.12

There are 1 quarters with good PRF difference image offsets

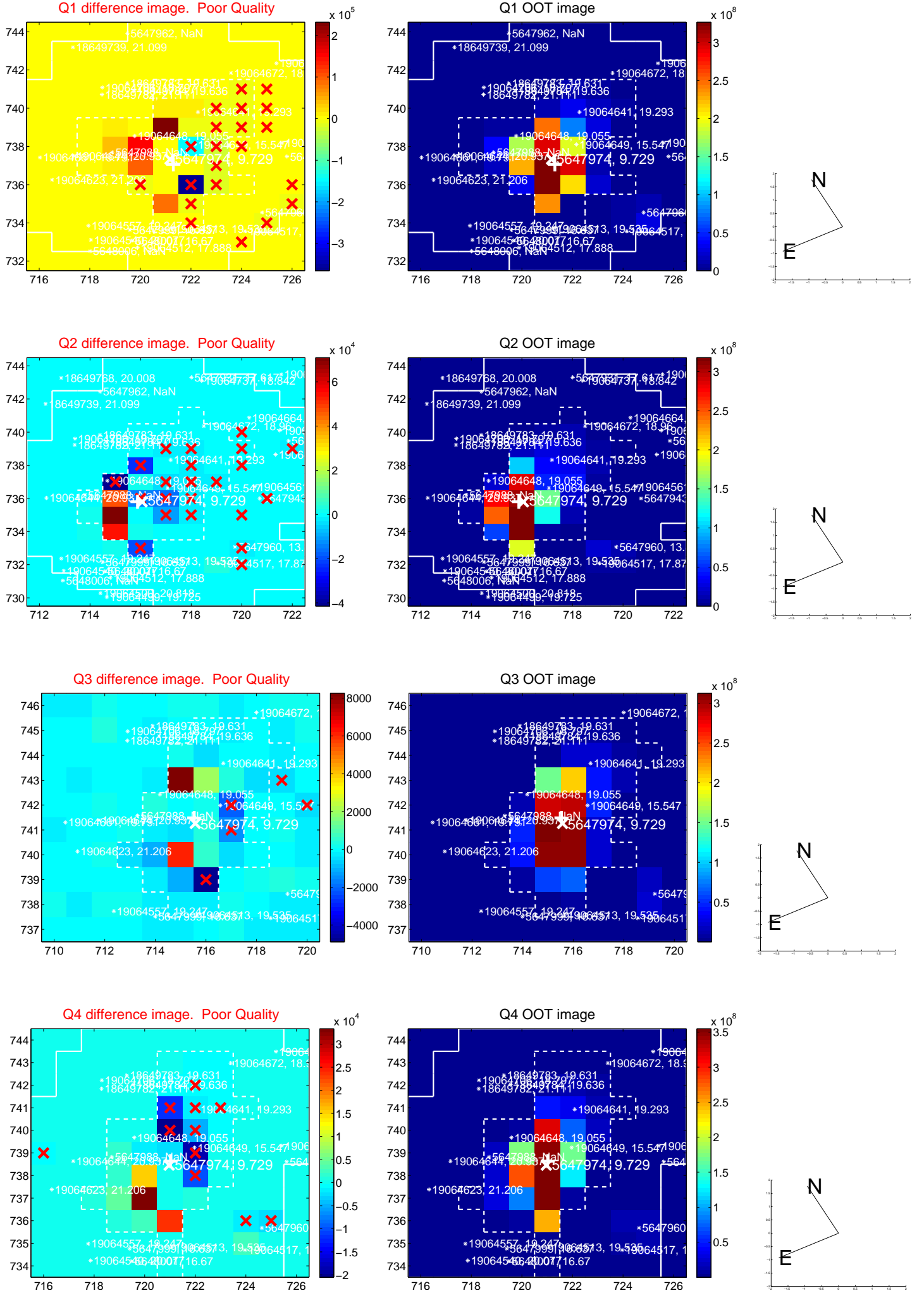
The direct PRF centroid is offset from the target star catalog position by about 1.03 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.841 ± 2.135	0.39	0.545 ± 2.442	-0.641 ± 1.152
PRF-fit source offset from KIC position	0.706 ± 2.201	0.32	0.628 ± 2.381	-0.323 ± 1.002
photometric centroid source offset	—	—	—	—

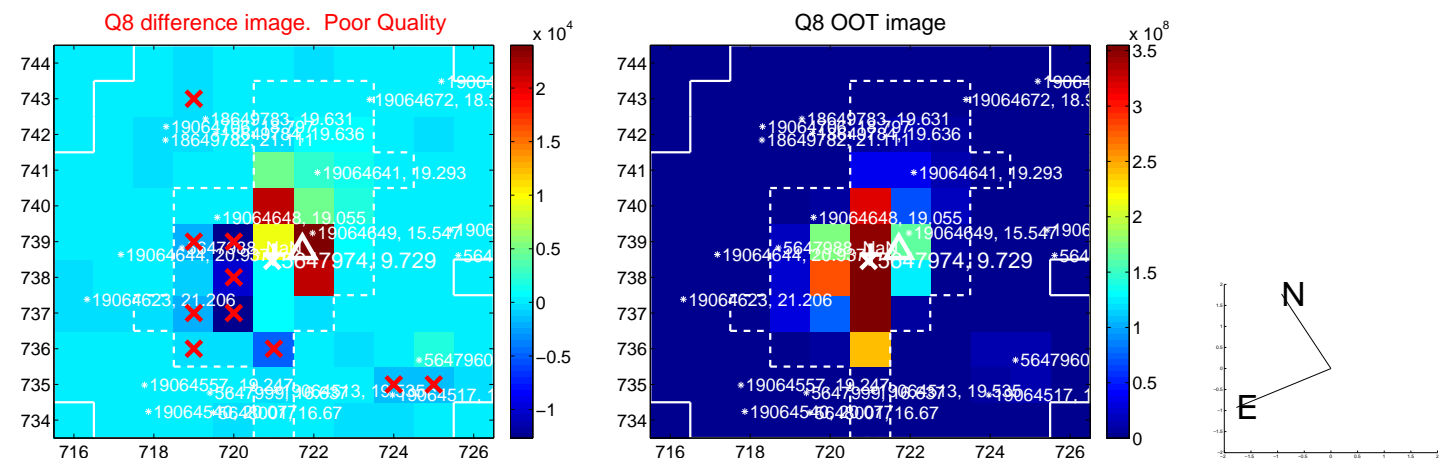
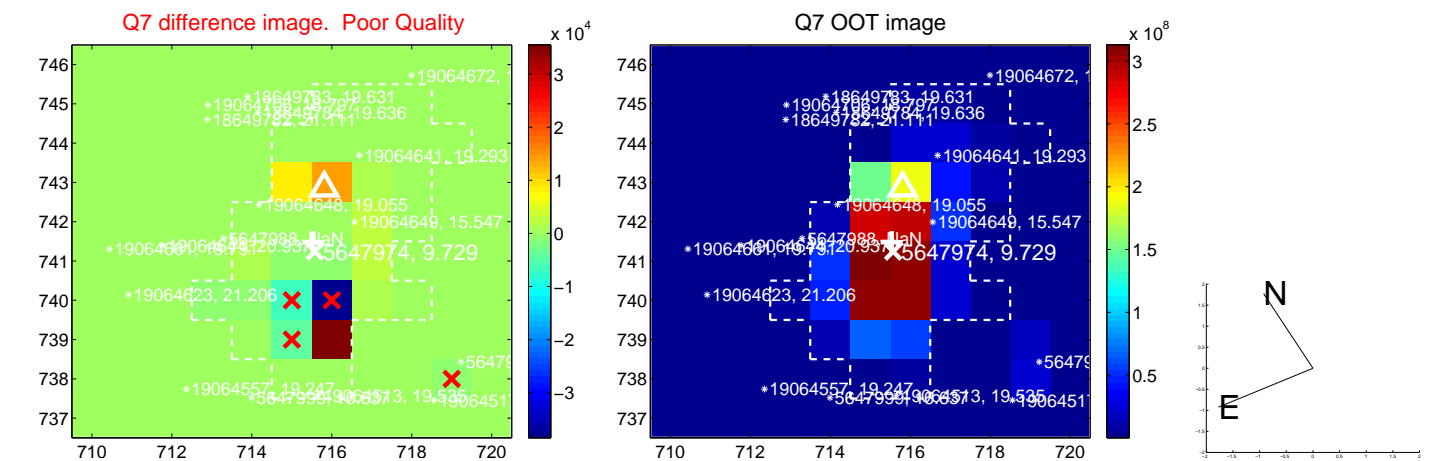
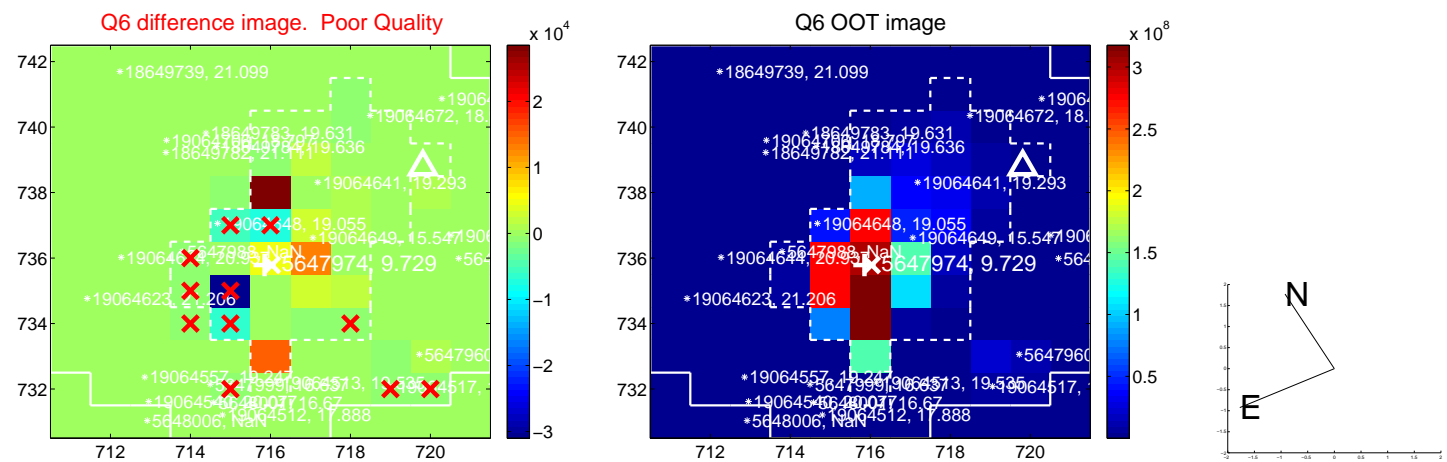
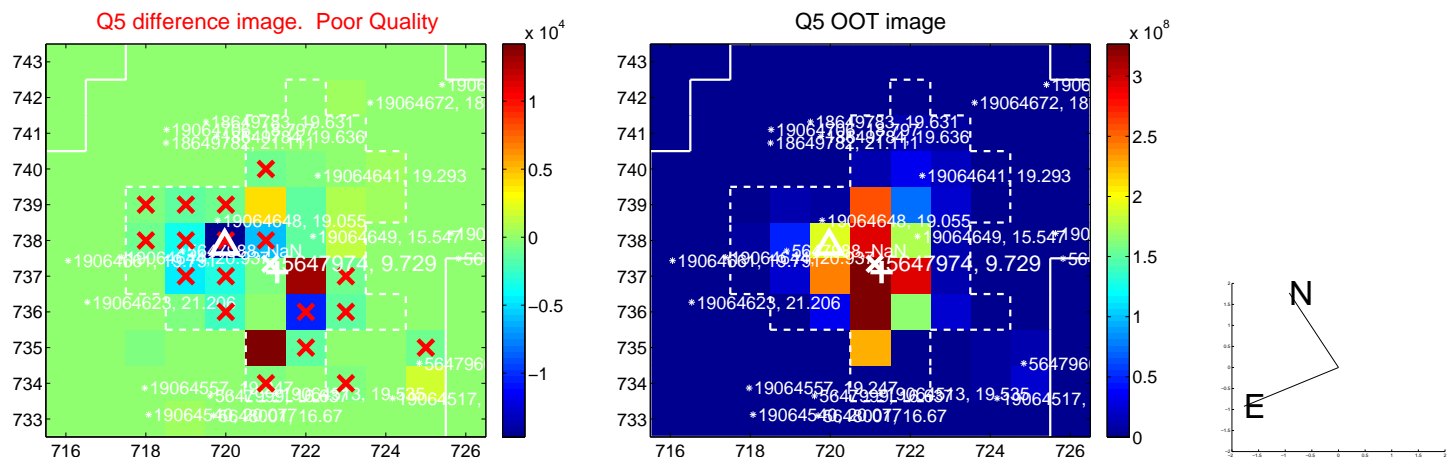


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

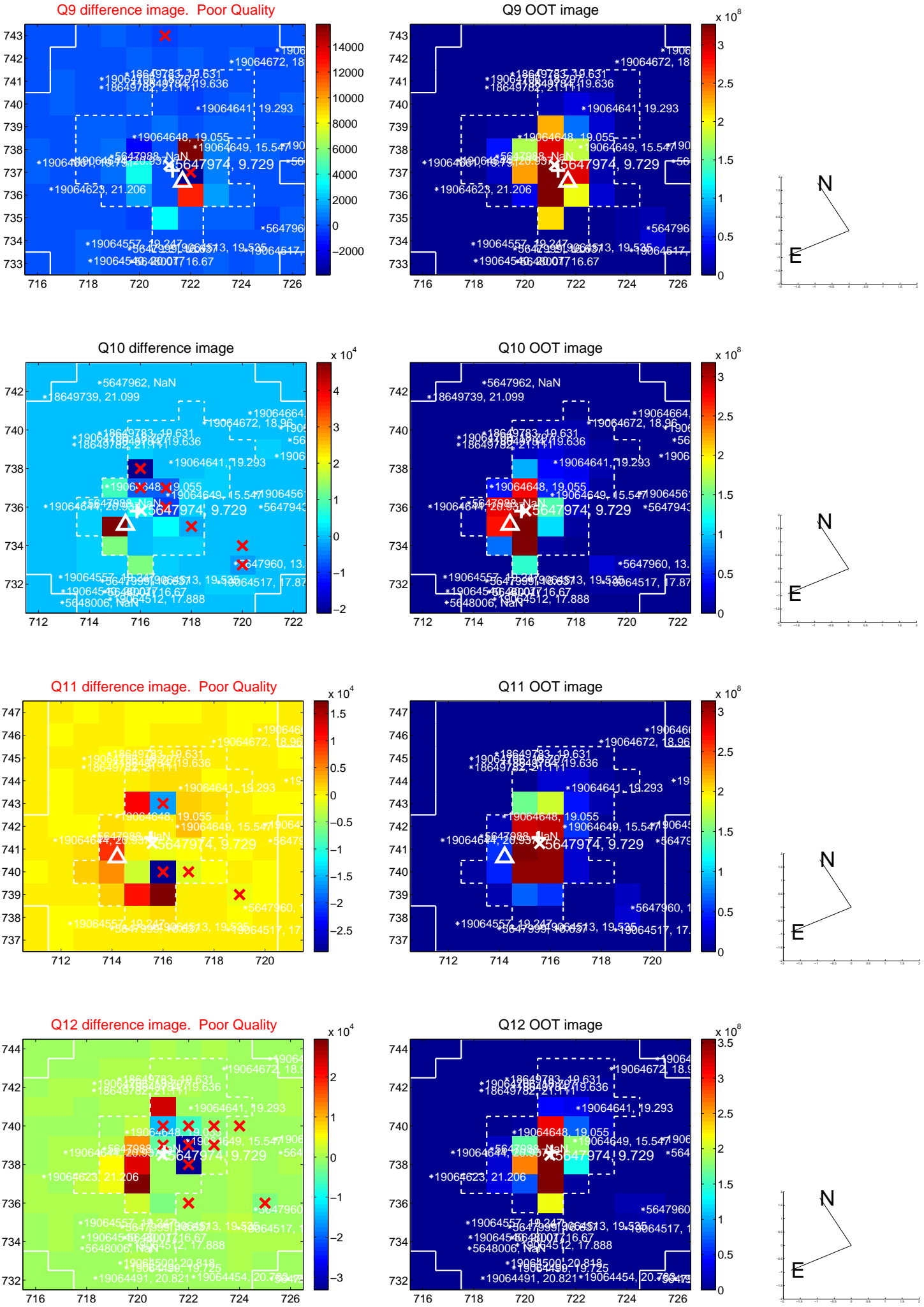
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



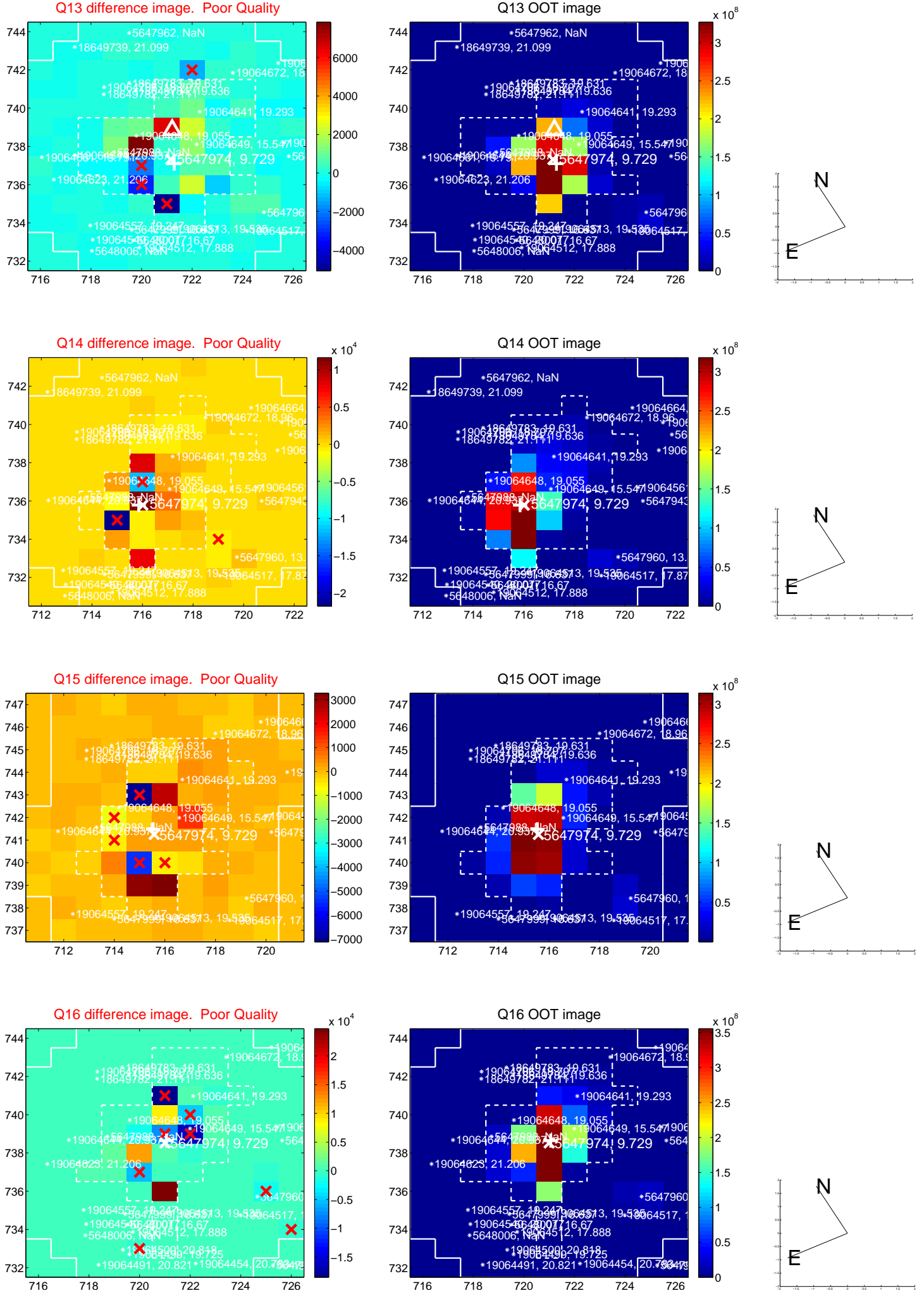
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



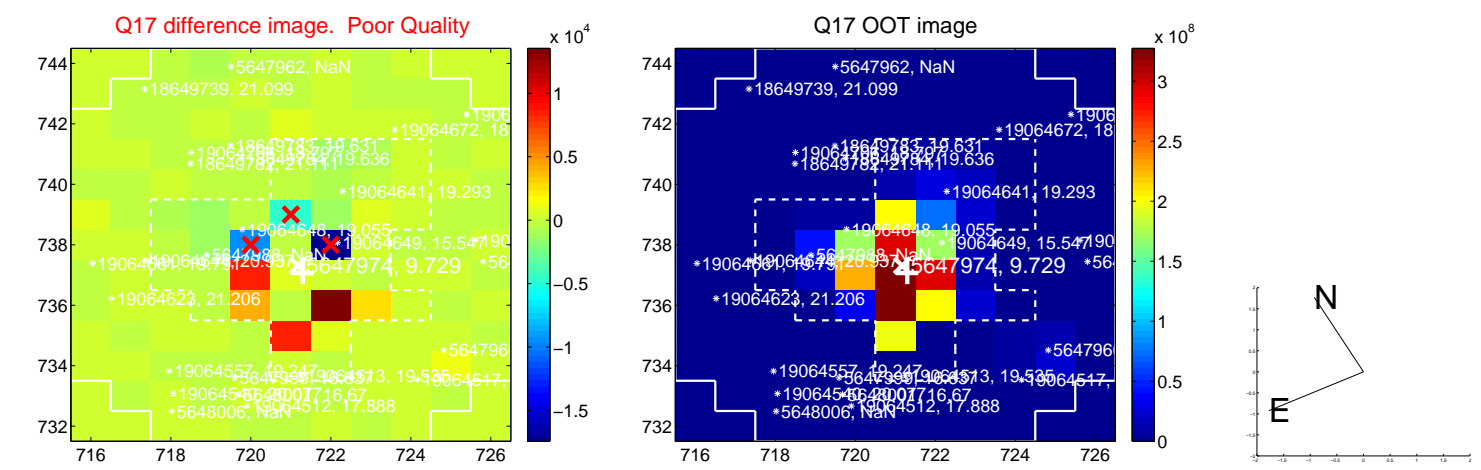
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



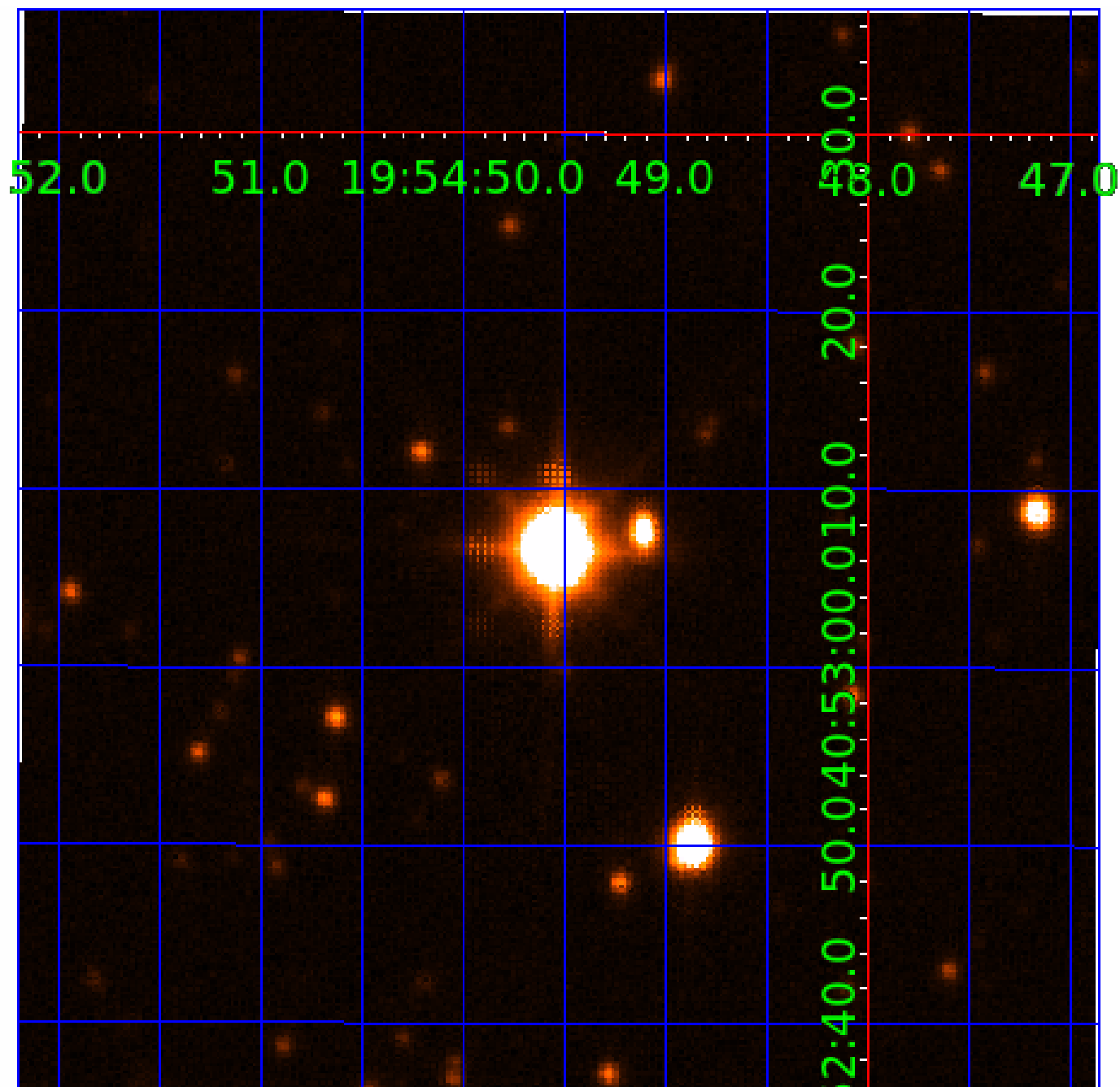
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



folded centroid time series figure for this object.

UKIRT Image

Declination



KIC 005647974

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})
005647974-01	OBS	No	1.716273	132.559047	3.3	5.533	8.4	7.1	1.93	8425	0.41	14756.39
005647974-02	OBS	No	160.128461	204.610035	17.8	10.521	38.9	2.1	1.93	8425	0.90	34.87

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005647974-01	OBS	FP	0.00	1	0	0	0	LPP_DV—CENT_SATURATED
005647974-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_SATURATED

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

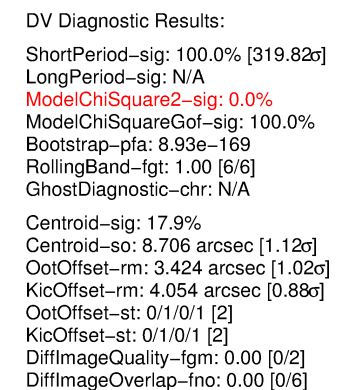
N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

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

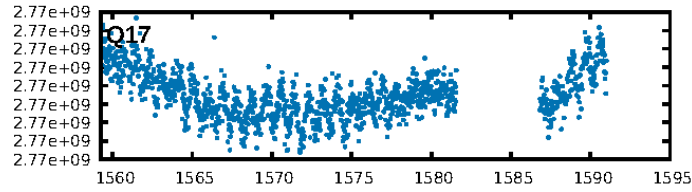
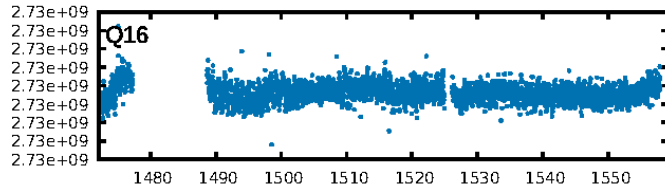
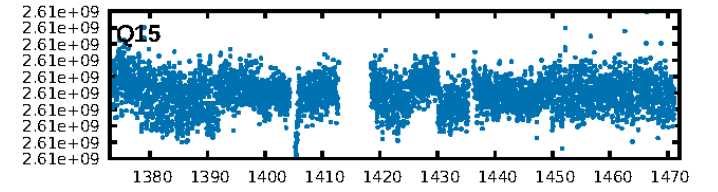
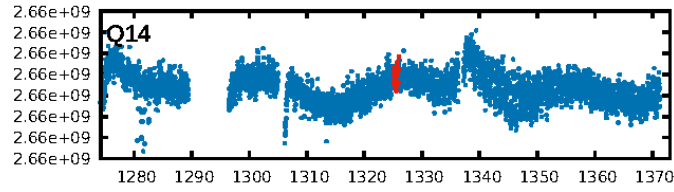
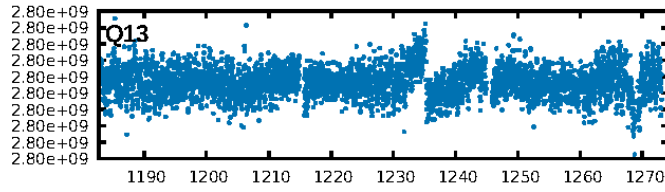
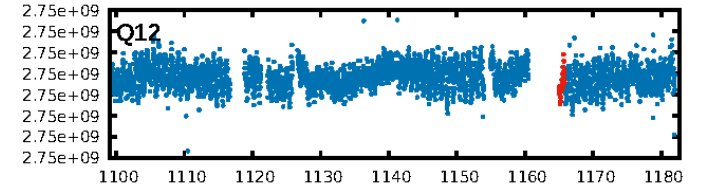
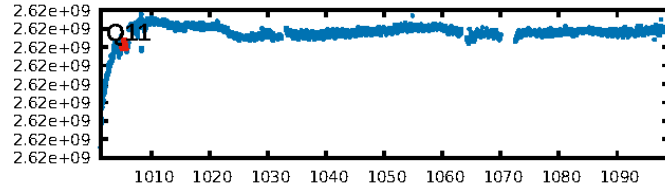
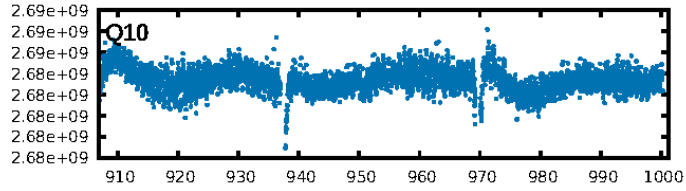
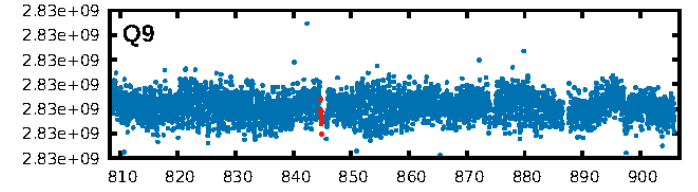
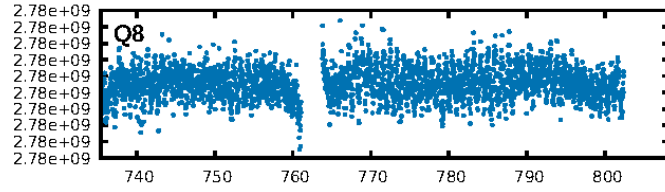
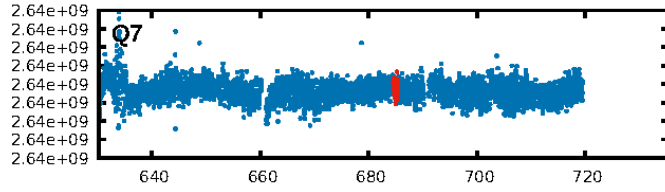
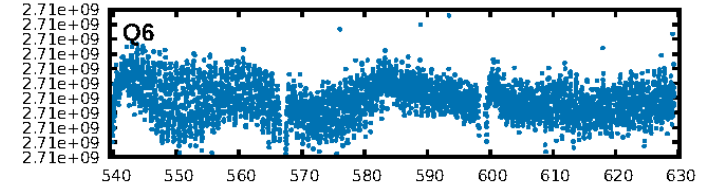
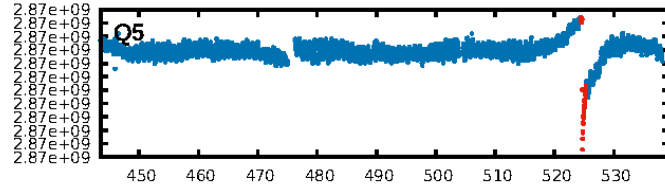
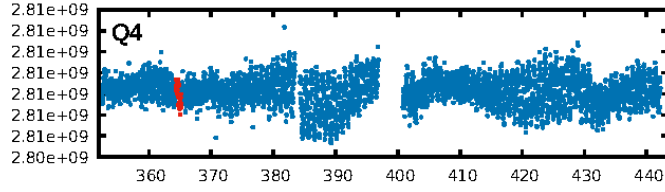
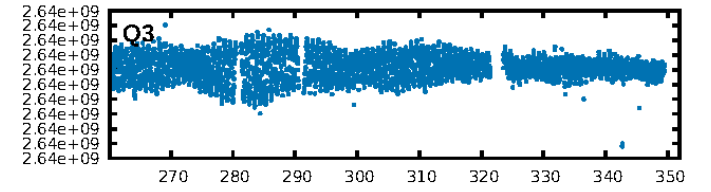
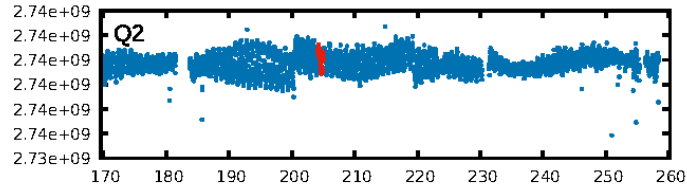
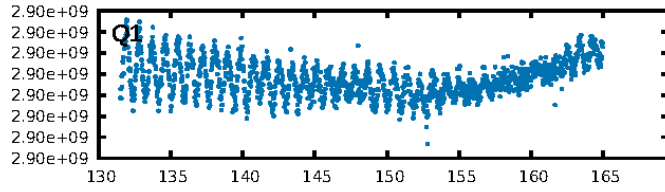
Ephemeris Match Information For 005647974-02

No Significant Match Found

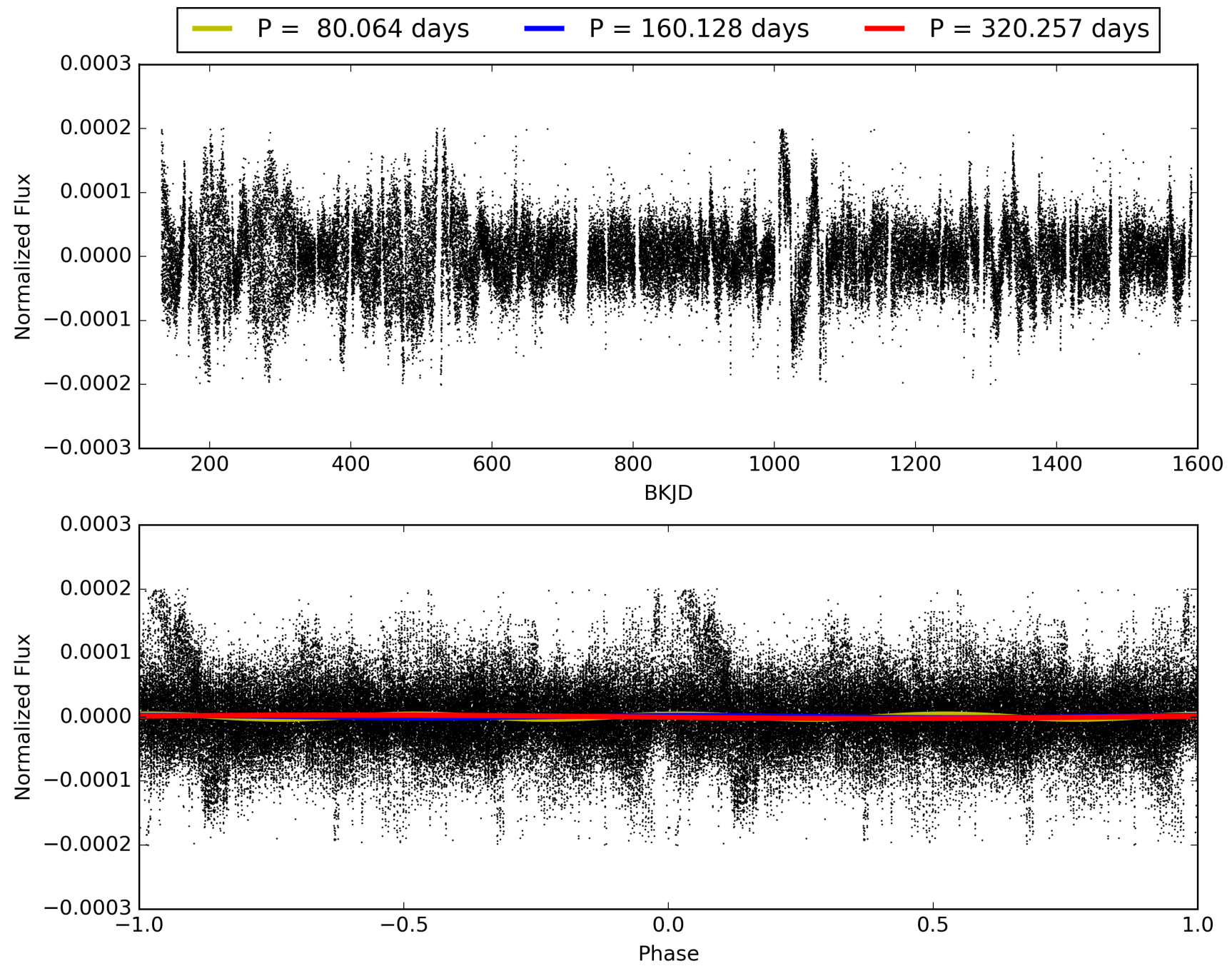
KIC: 5647974 Candidate: 2 of 2 Period: 160.128 d



TCE 005647974-02, PDC Light Curves

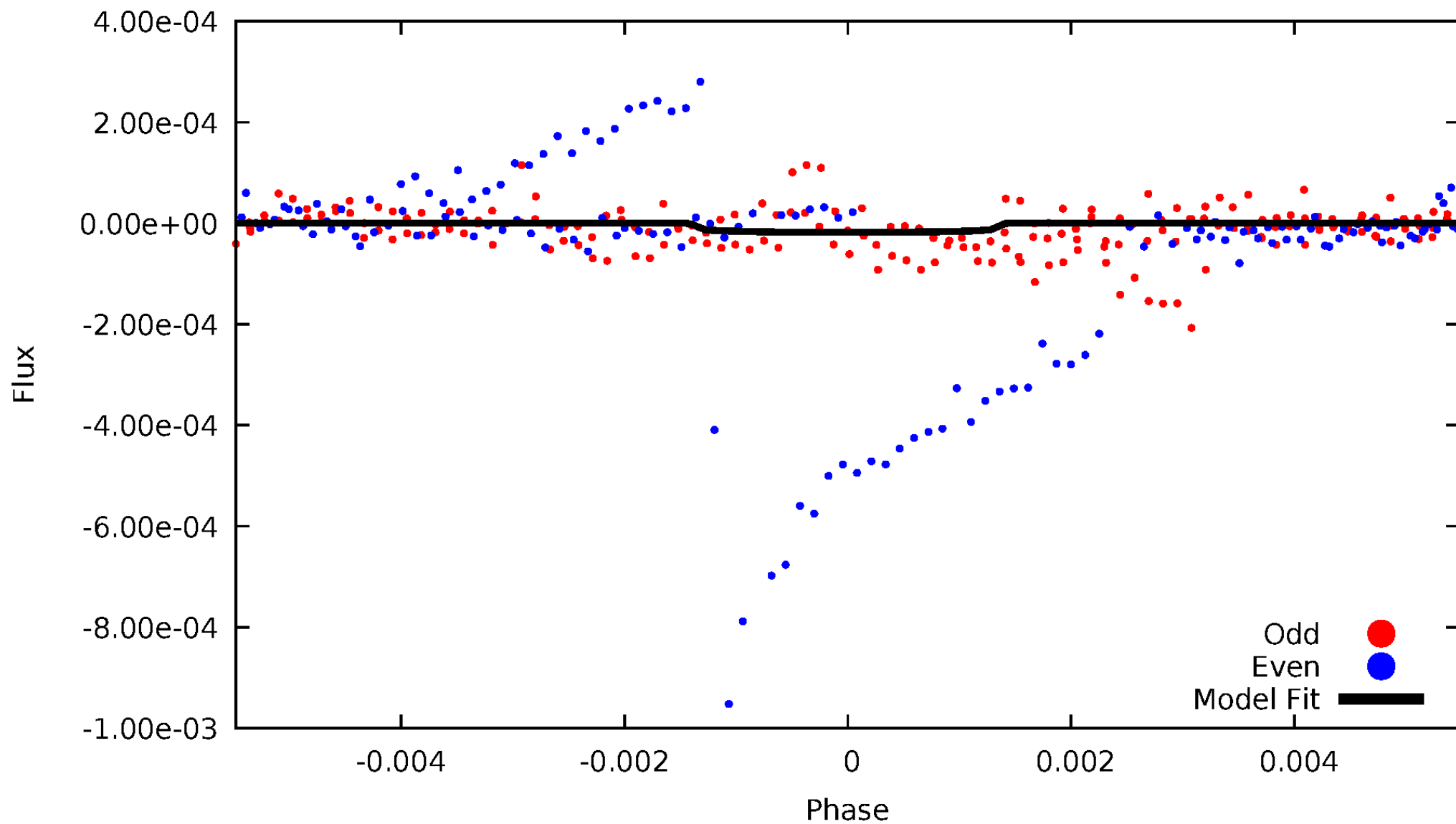


TCE 005647974-02



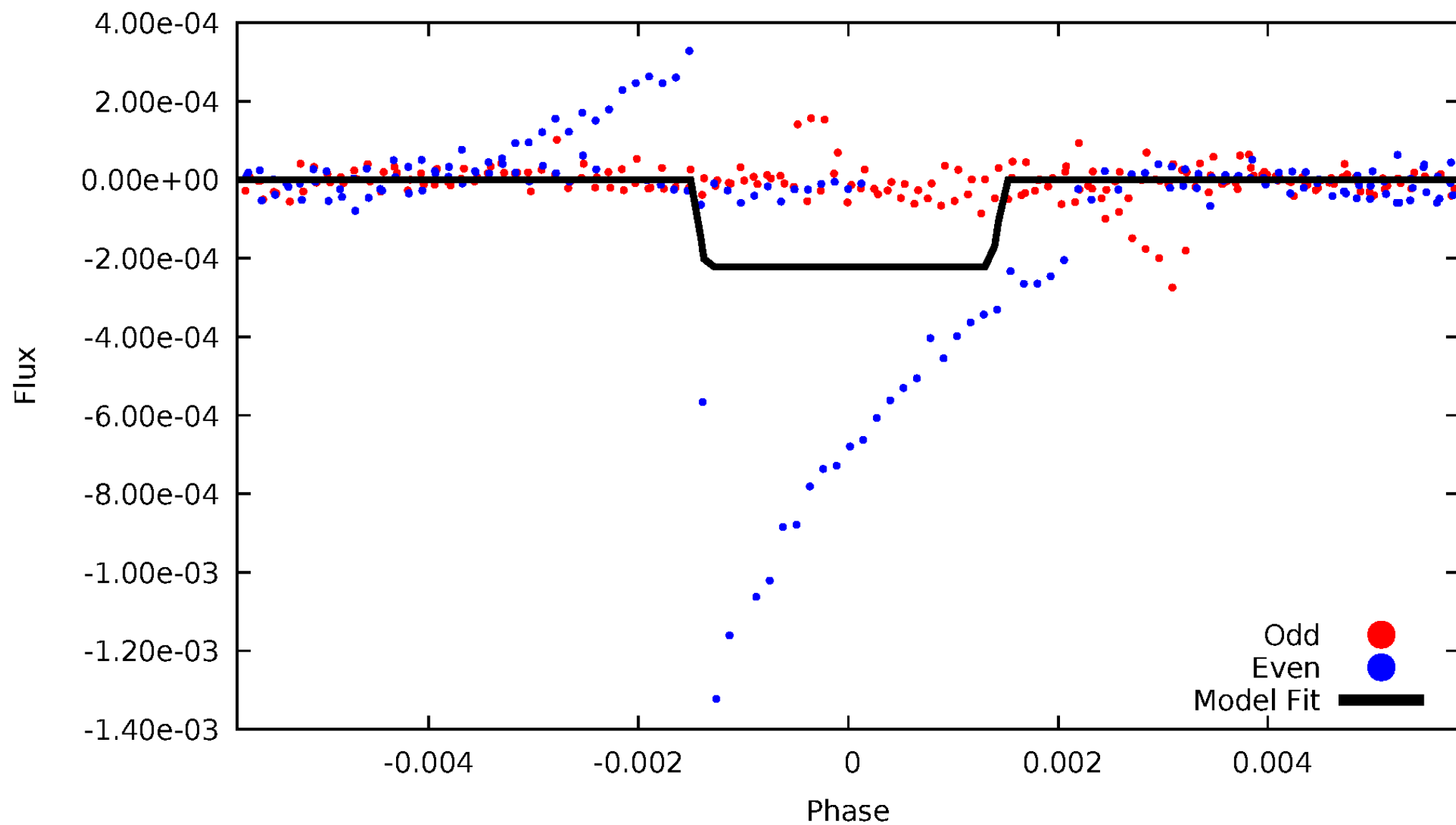
DV Odd/Even

TCE 005647974-02



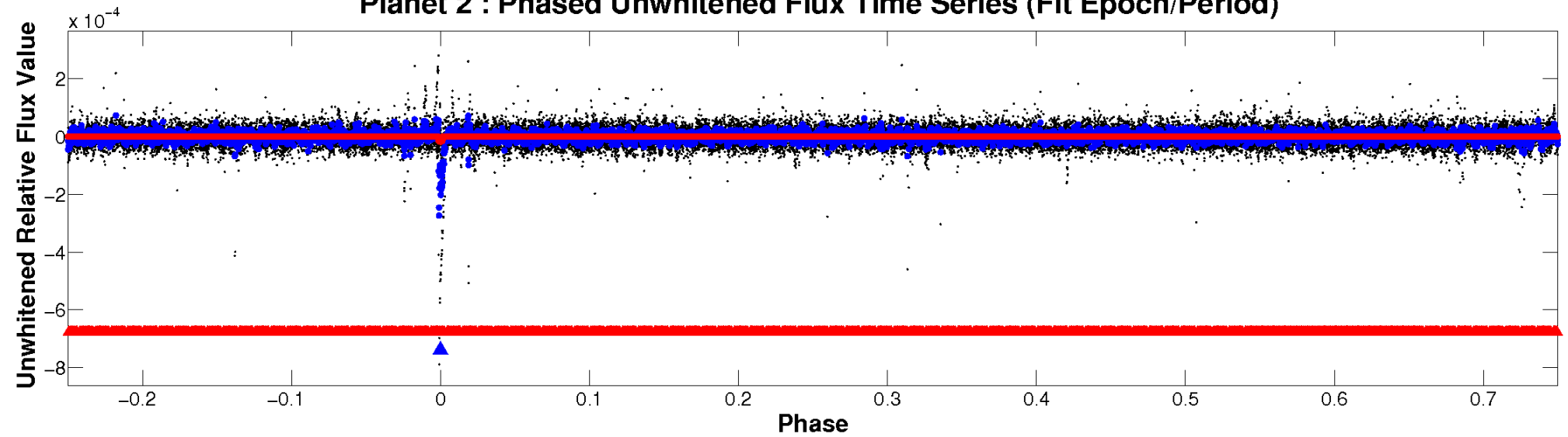
ALT Odd/Even

TCE 005647974-02

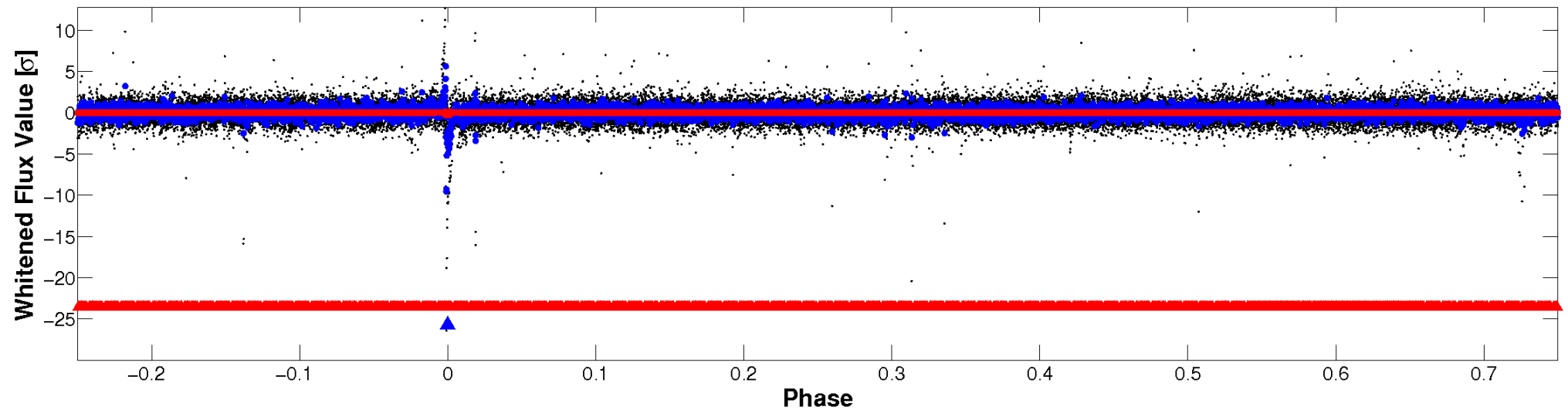


Non-Whitened Vs. Whitened Light Curve

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



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



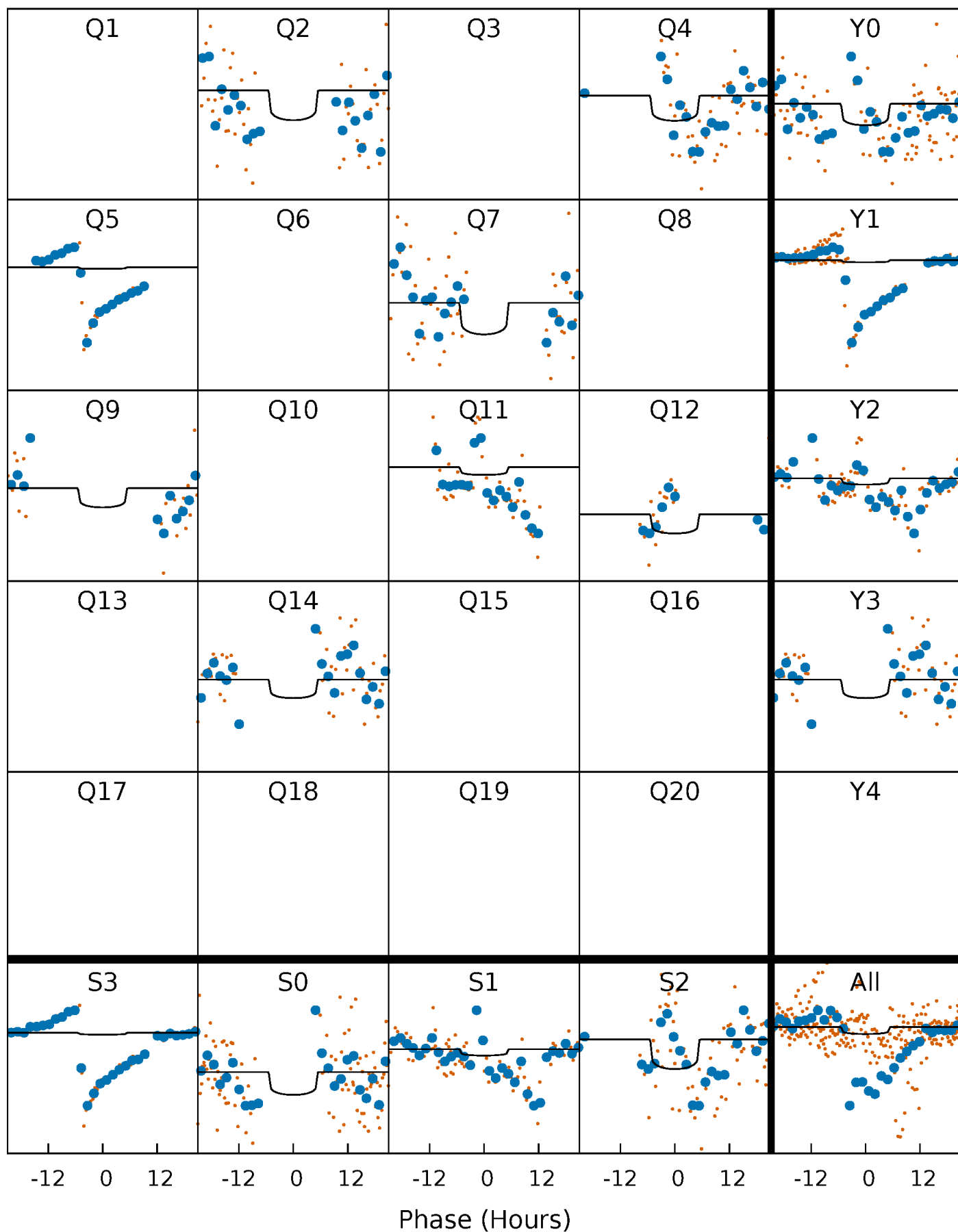
PDC Quarter-Phased Transit Curves

TCE 005647974-02 P=160.128461 Days $T_0=204.610035$ (BKJD)



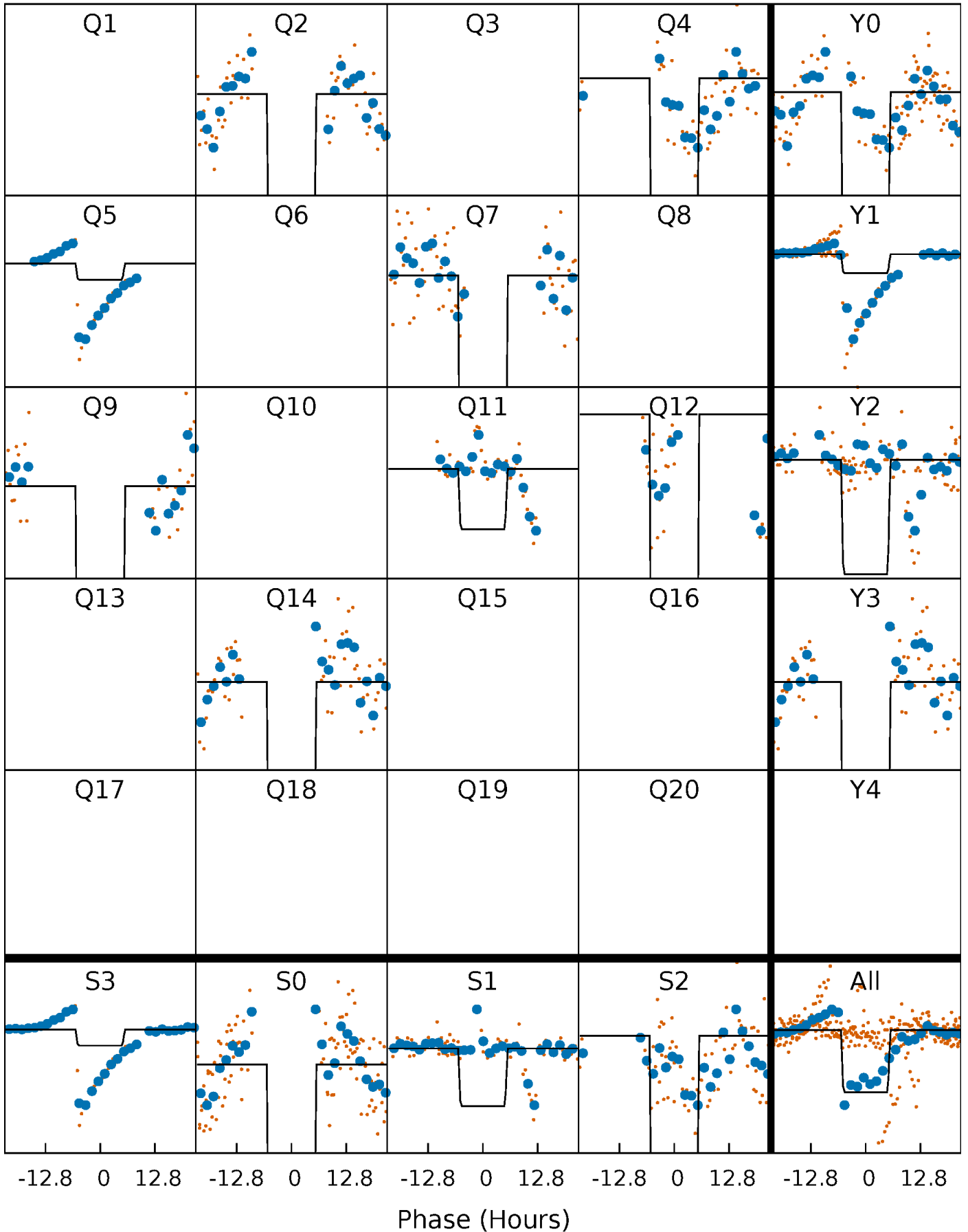
DV Quarter-Phased Transit Curves

TCE 005647974-02 $P=160.128461$ Days $T_0=204.610035$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

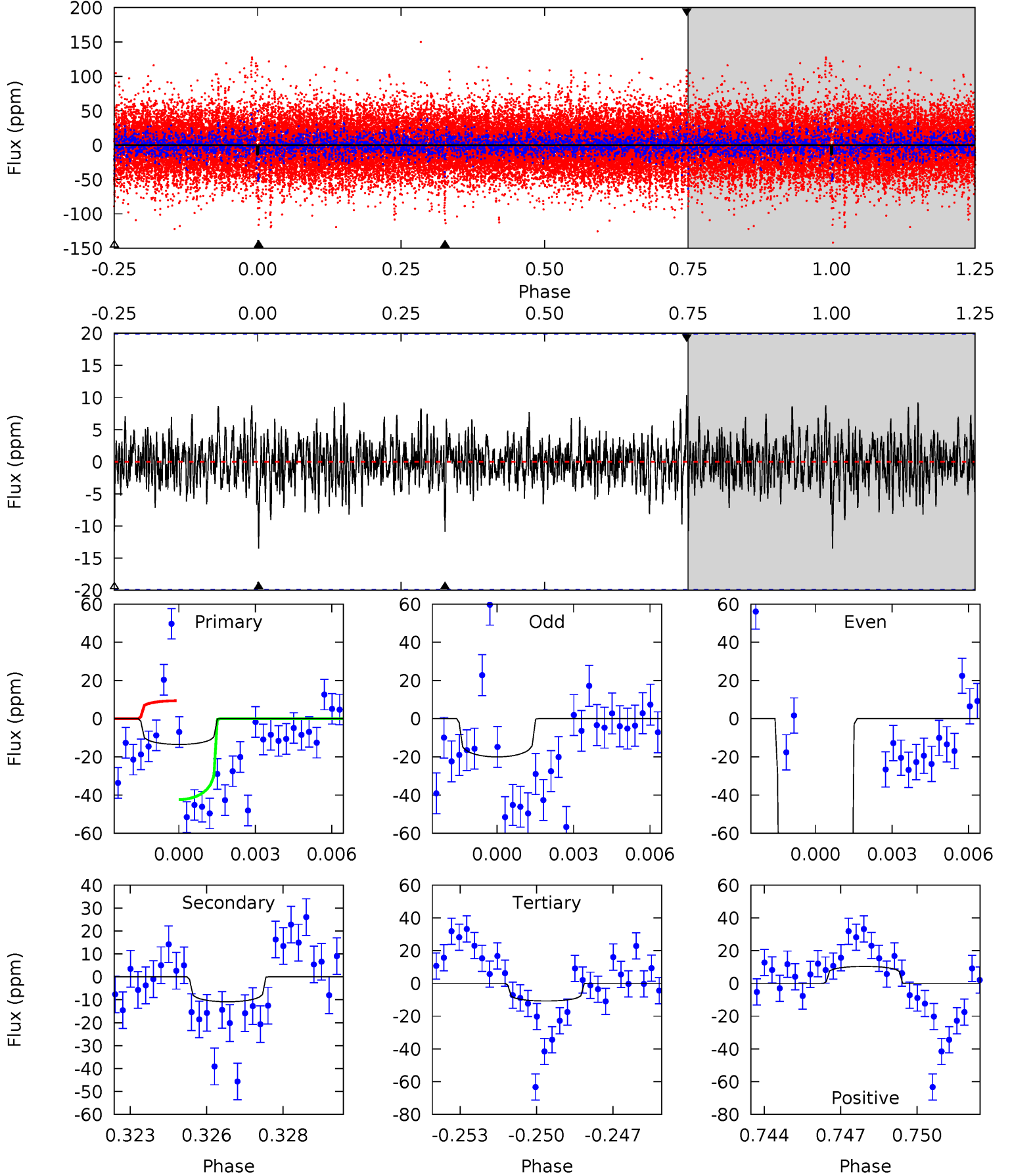
TCE 005647974-02 $P=160.117376$ Days $T_0=204.663486$ (BKJD)



DV Model-Shift Uniqueness Test

005647974-02, $P = 160.128461$ Days, $E = 44.481574$ Days

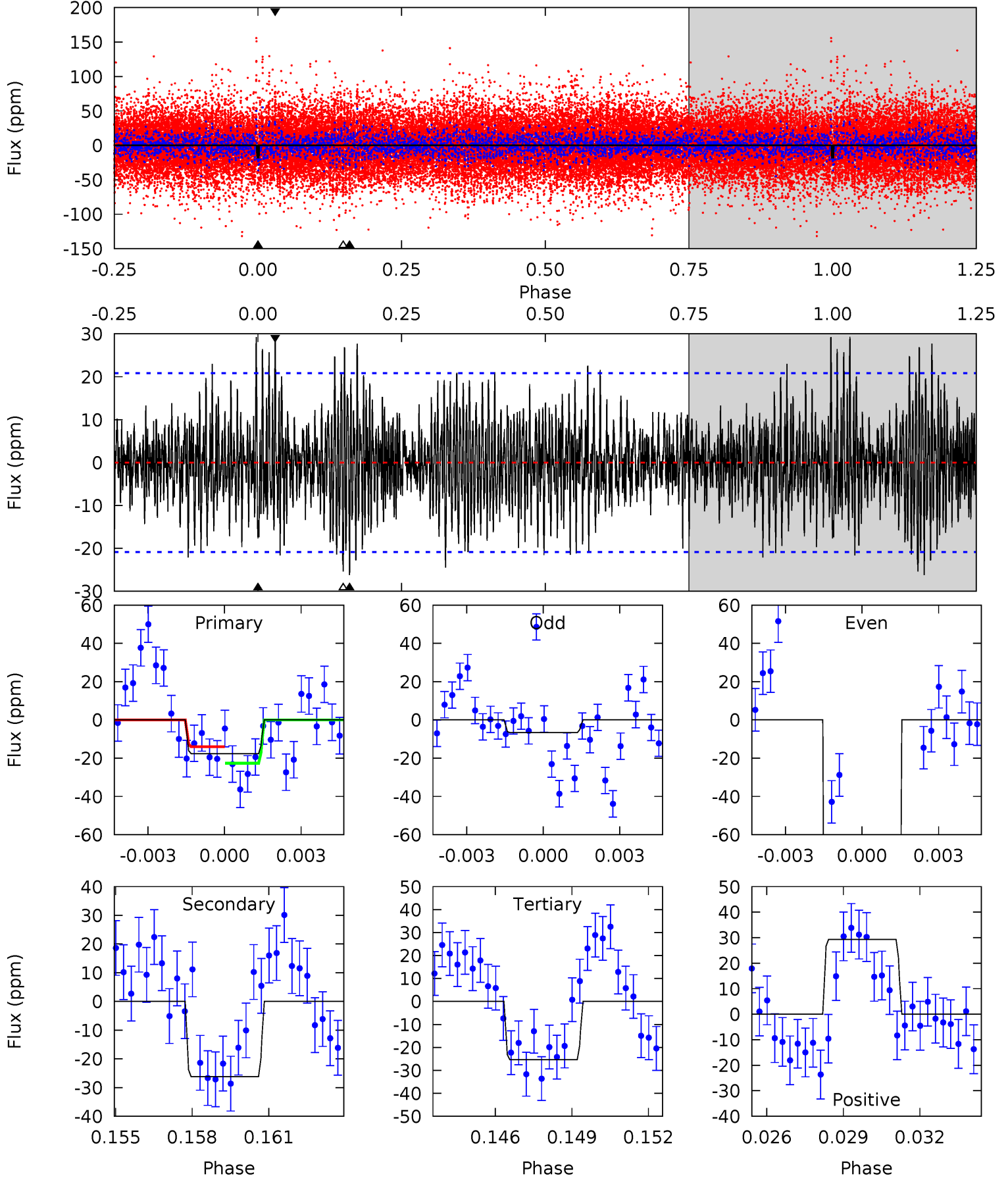
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.56	2.87	2.84	2.74	5.26	2.99	0.72	0.72	0.83	0.03	0.14	36.9	10.6	0.43	0



Alt Model-Shift Uniqueness Test

005647974-02, P = 160.117376 Days, E = 44.546110 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.45	6.60	6.40	7.40	5.26	2.98	2.03	-1.95	-2.94	0.20	-0.80	51.2	5.40	0.53	1.09



Stellar Parameters For KIC 005647974

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	8425^{+235}_{-353}	$4.107^{+0.145}_{-0.145}$	$-0.280^{+0.300}_{-0.300}$	$1.927^{+0.418}_{-0.418}$	$1.734^{+0.166}_{-0.248}$	$0.341^{+0.252}_{-0.145}$
	+3%/-4%	+4%/-4%	+107%/-107%	+22%/-22%	+10%/-14%	+74%/-43%
Source	KIC0	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 005647974-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-11 ± 4	$0.90^{+0.57}_{-0.50}$	862^{+54}_{-50}	7043^{+4835}_{-1617}	3331^{+12822}_{-2157}
Alt.	-26 ± 4	$3.13^{+0.71}_{-0.60}$	864^{+54}_{-52}	4851^{+441}_{-411}	694^{+380}_{-263}

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 $A_{obs} \gg 1.0$

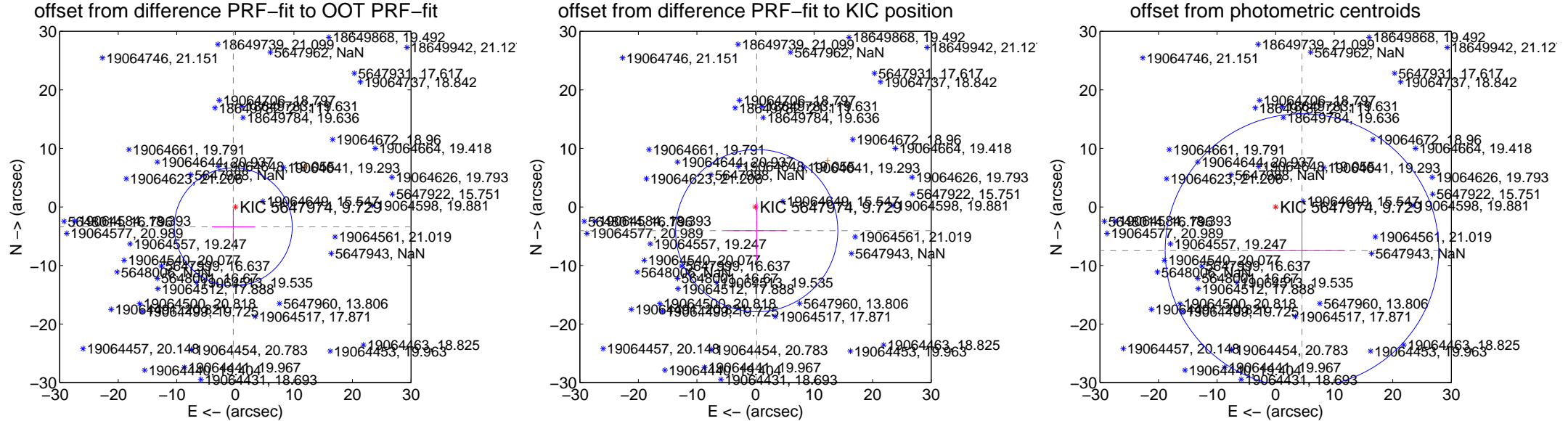
DV Centroid Data

Supplemental centroid analysis for 005647974-02. **Kepler magnitude: 9.73.** Transit SNR 2.13

There are 0 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.97 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	3.424 ± 3.357	1.02	0.351 ± 3.641	-3.406 ± 3.000
PRF-fit source offset from KIC position	4.054 ± 4.616	0.88	-0.209 ± 5.041	-4.048 ± 4.883
photometric centroid source offset	8.71 ± 7.79	1.12	-4.50 ± 7.37	-7.45 ± 7.93



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.

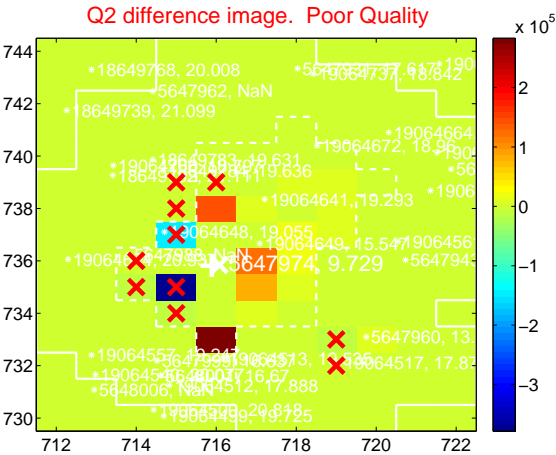
Q1 no difference image



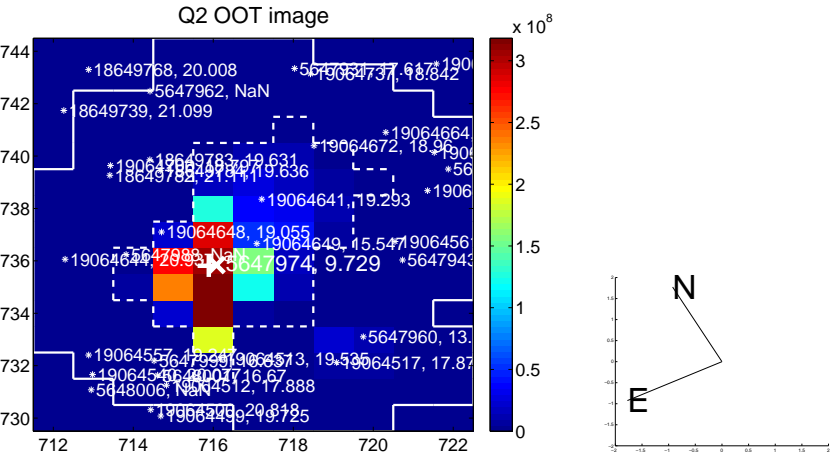
Q1 no OOT image



Q2 difference image. Poor Quality



Q2 OOT image



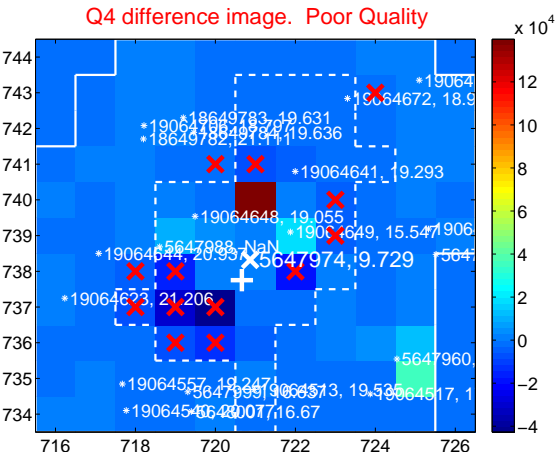
Q3 no difference image



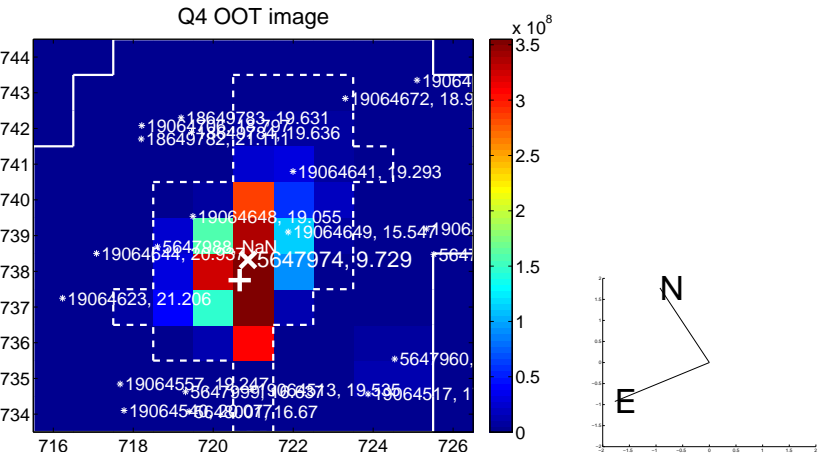
Q3 no OOT image



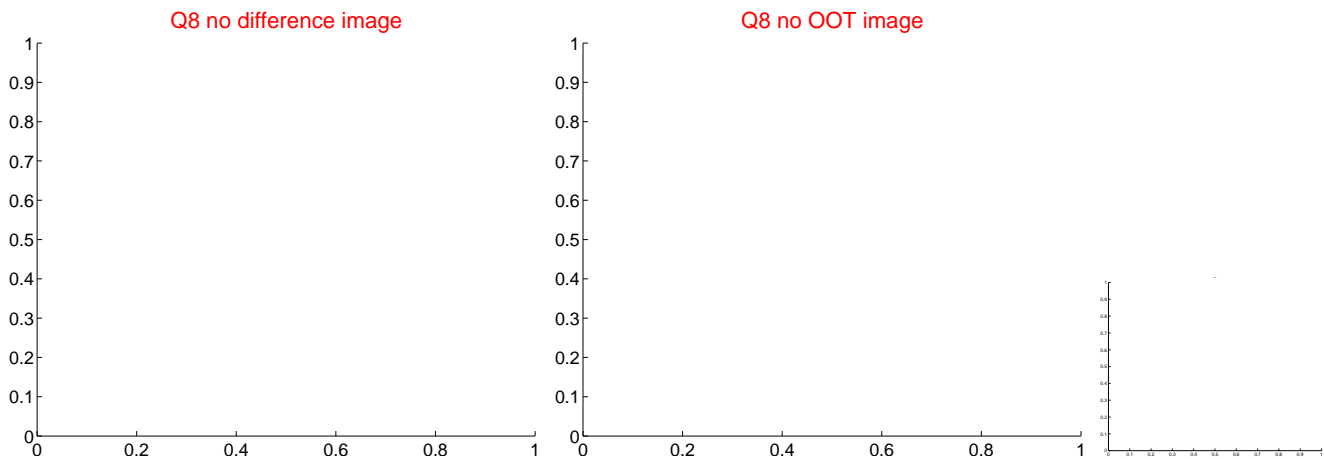
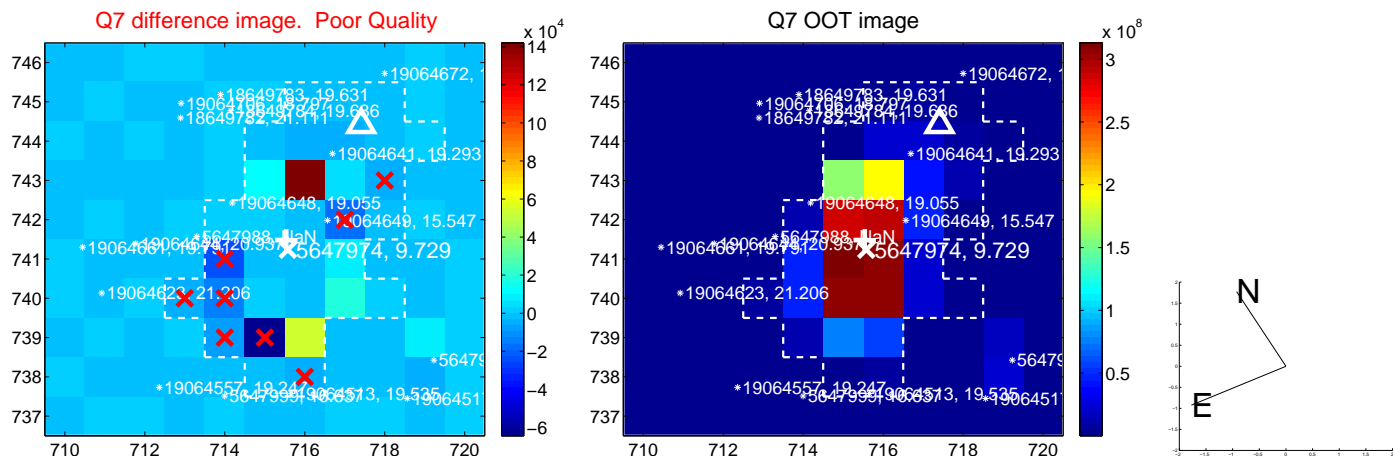
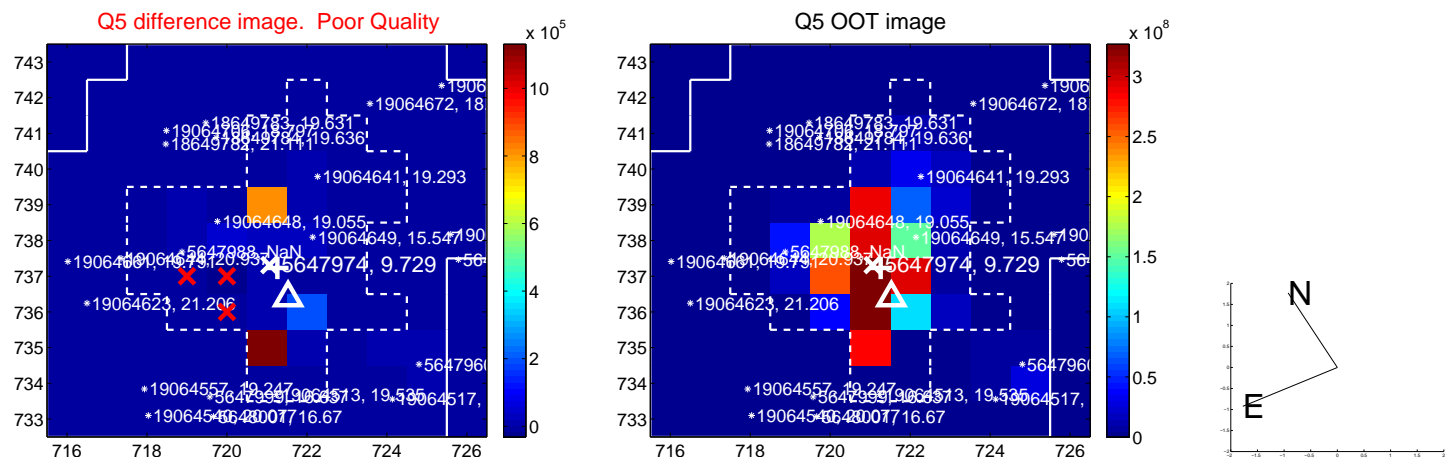
Q4 difference image. Poor Quality



Q4 OOT image

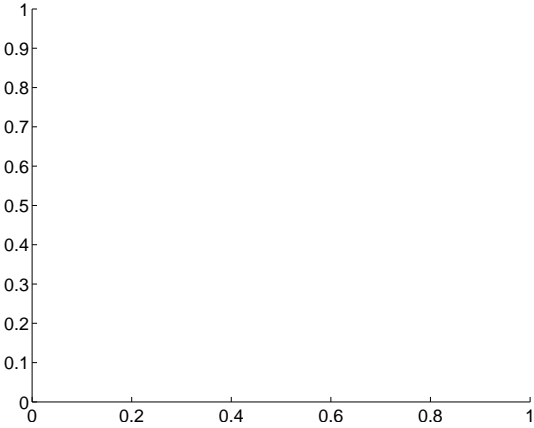


white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

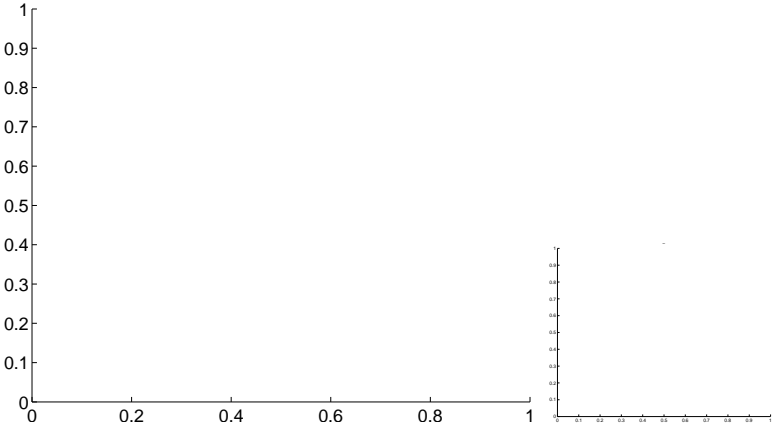


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

Q9 no difference image



Q9 no OOT image



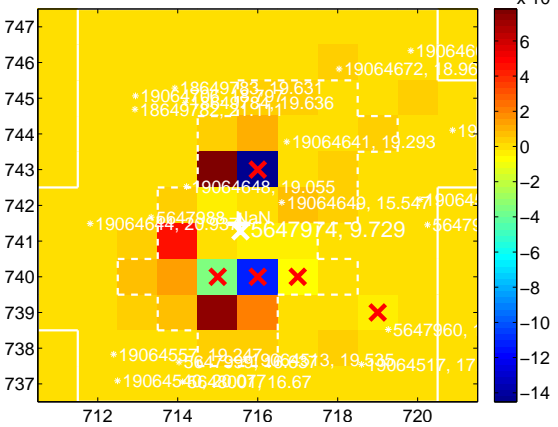
Q10 no difference image



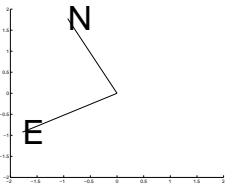
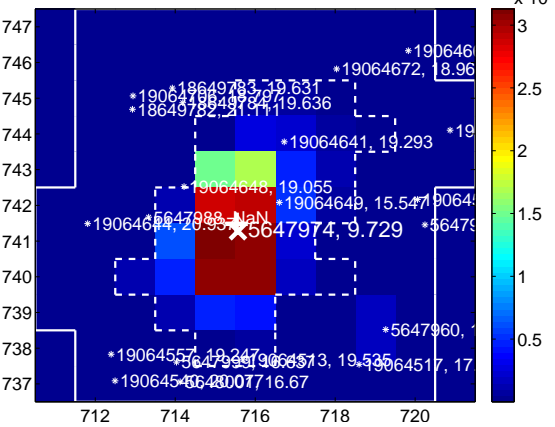
Q10 no OOT image



Q11 difference image. Poor Quality



Q11 OOT image



Q12 no difference image



Q12 no OOT image



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

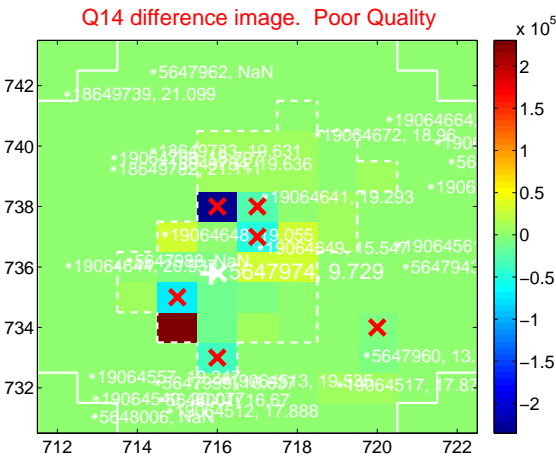
Q13 no difference image



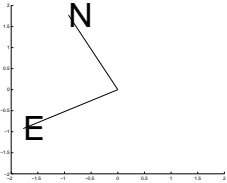
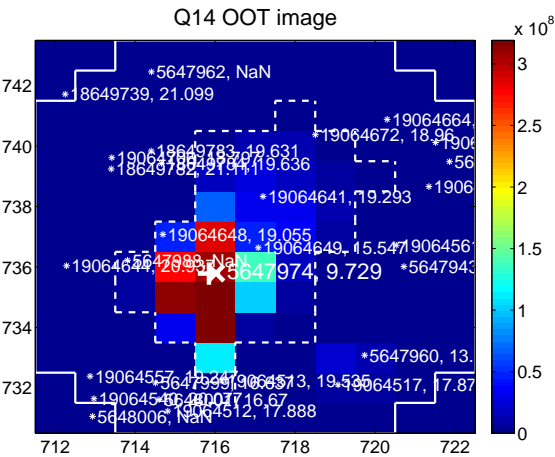
Q13 no OOT image



Q14 difference image. Poor Quality



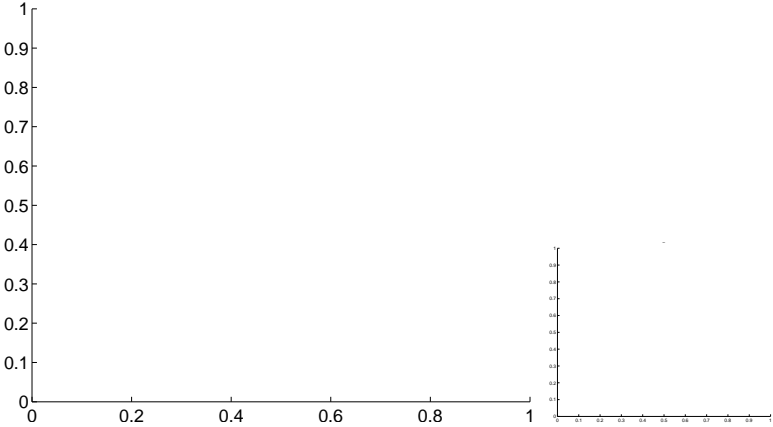
Q14 OOT image



Q15 no difference image



Q15 no OOT image



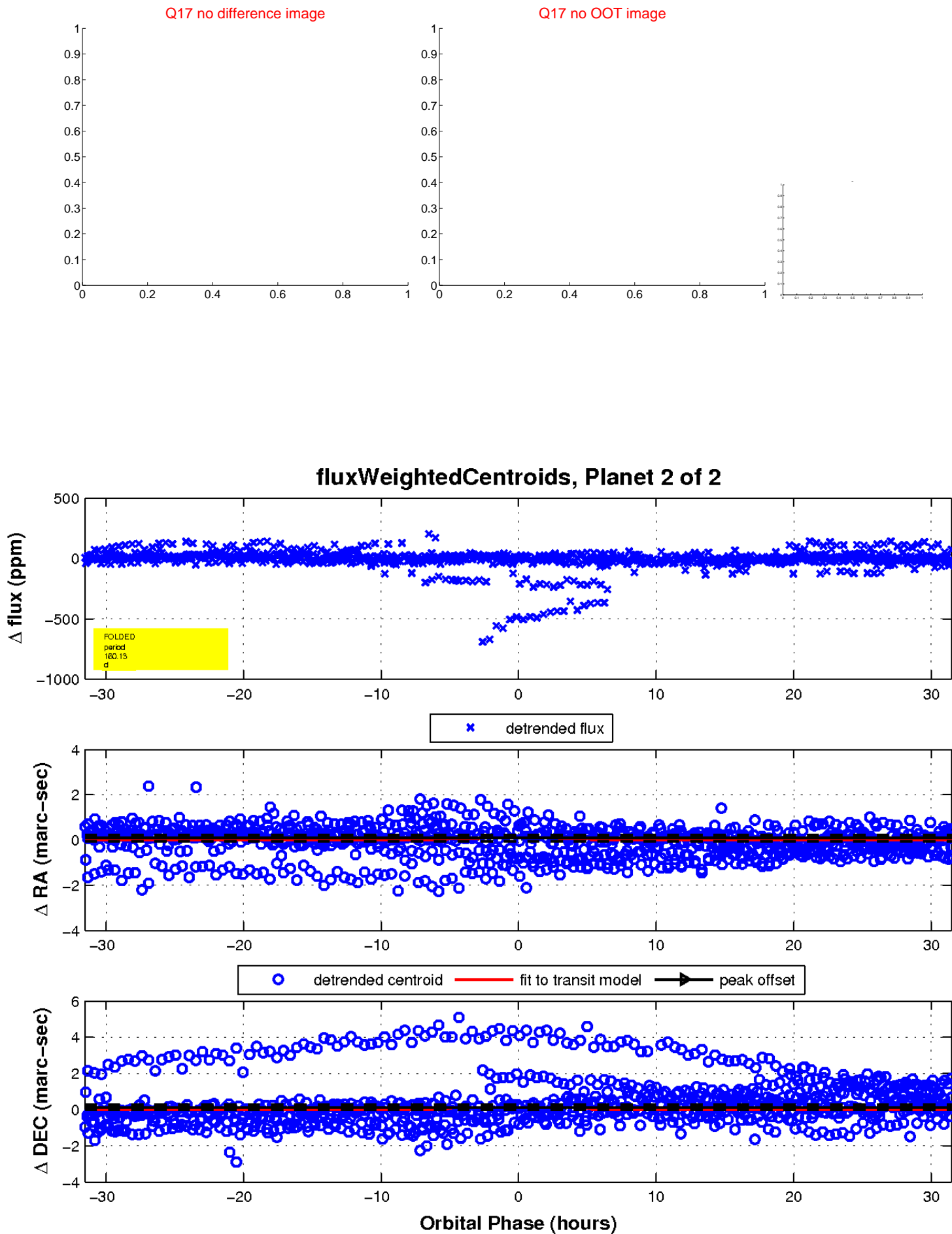
Q16 no difference image



Q16 no OOT image



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



UKIRT Image

Declination

