

KIC 006964804

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})
006964804-01	OBS	No	0.683988	131.968059	39.0	2.262	11.1	10.7	3.25	8048	2.35	106723.35
006964804-02	OBS	No	3.266373	131.756974	50.2	9.798	7.4	7.8	3.25	8048	2.65	13270.98

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006964804-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
006964804-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT

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

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

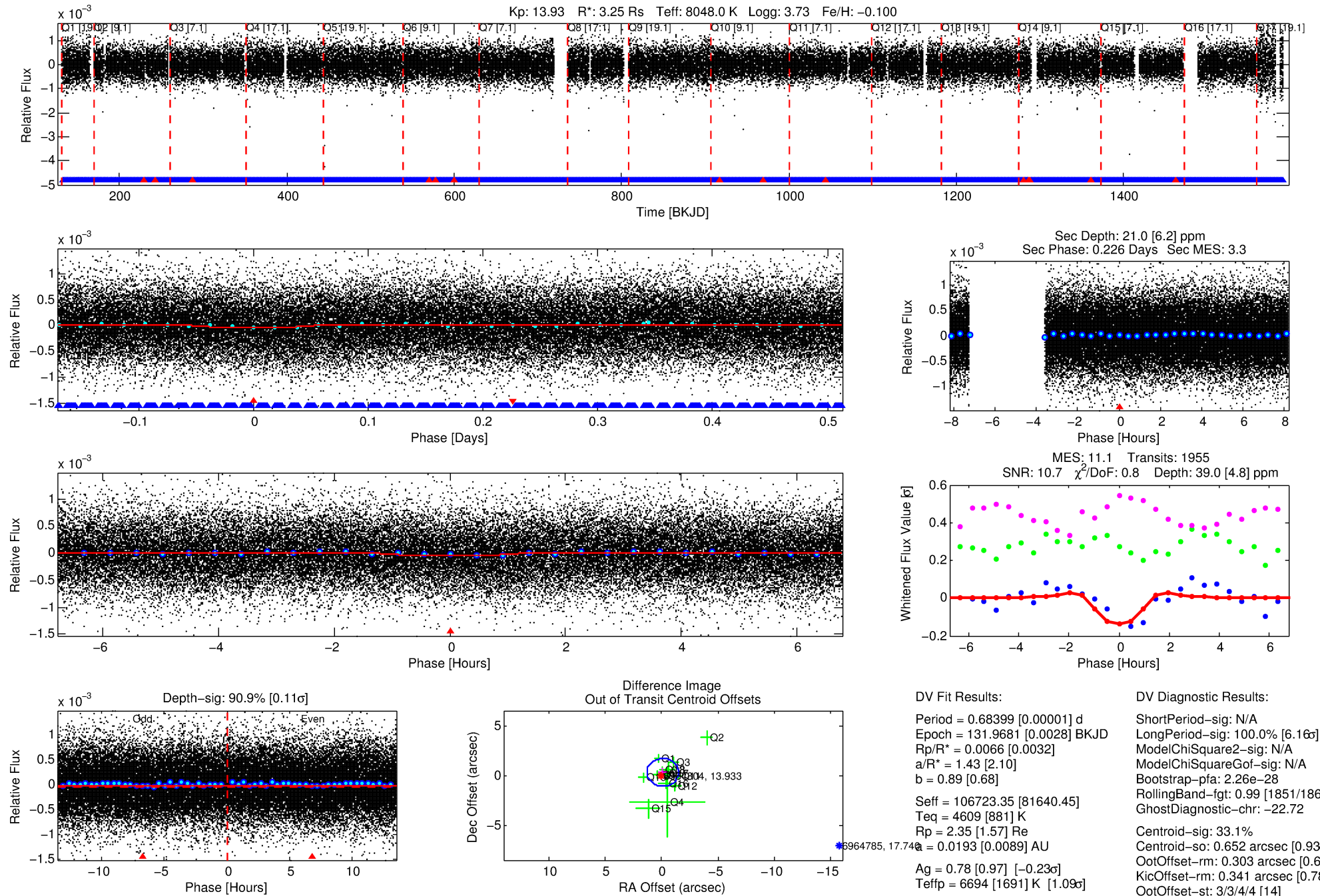
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006964804-01

No Significant Match Found

DV One-Page Summary

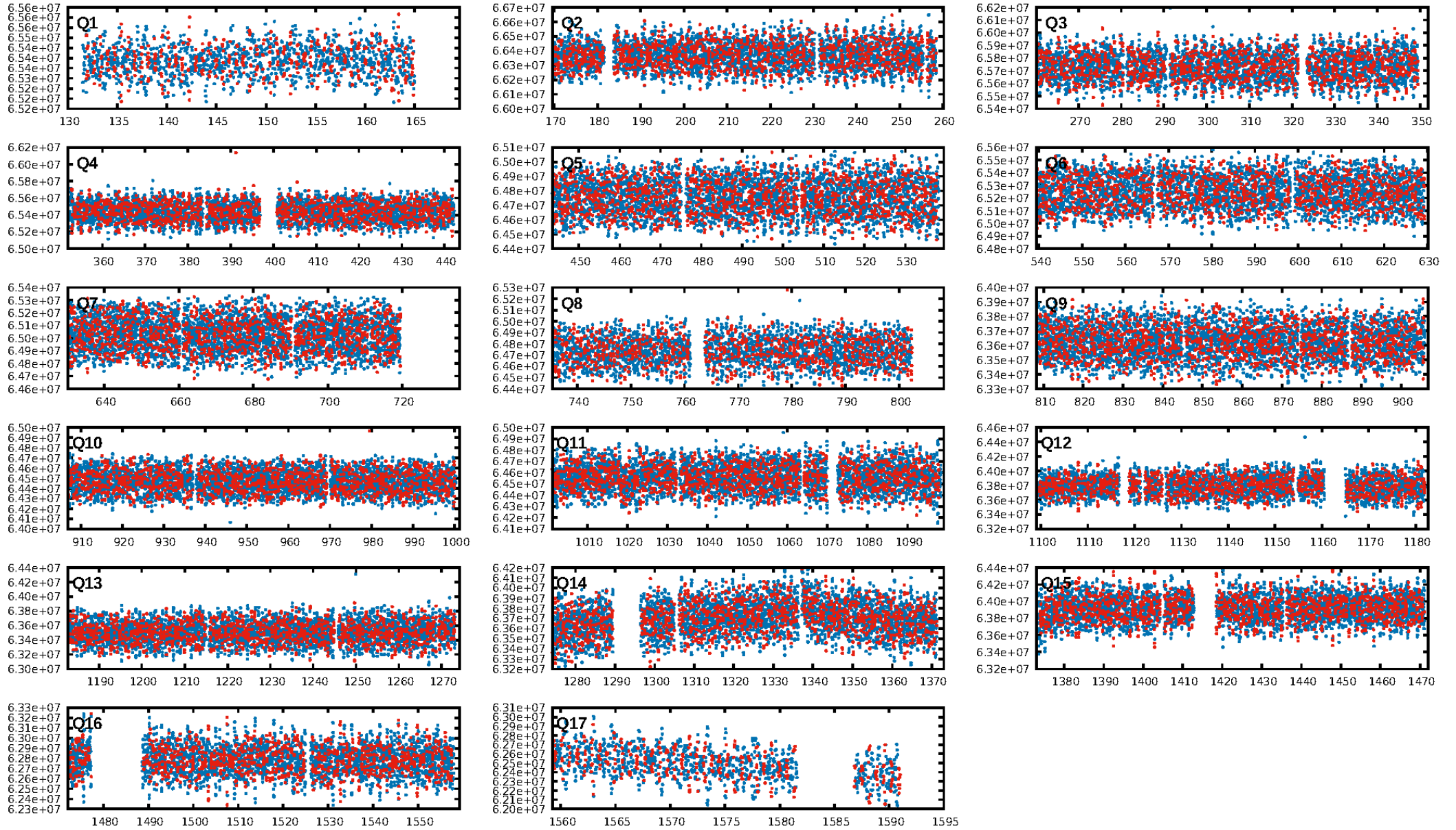
KIC: 6964804 Candidate: 1 of 2 Period: 0.684 d



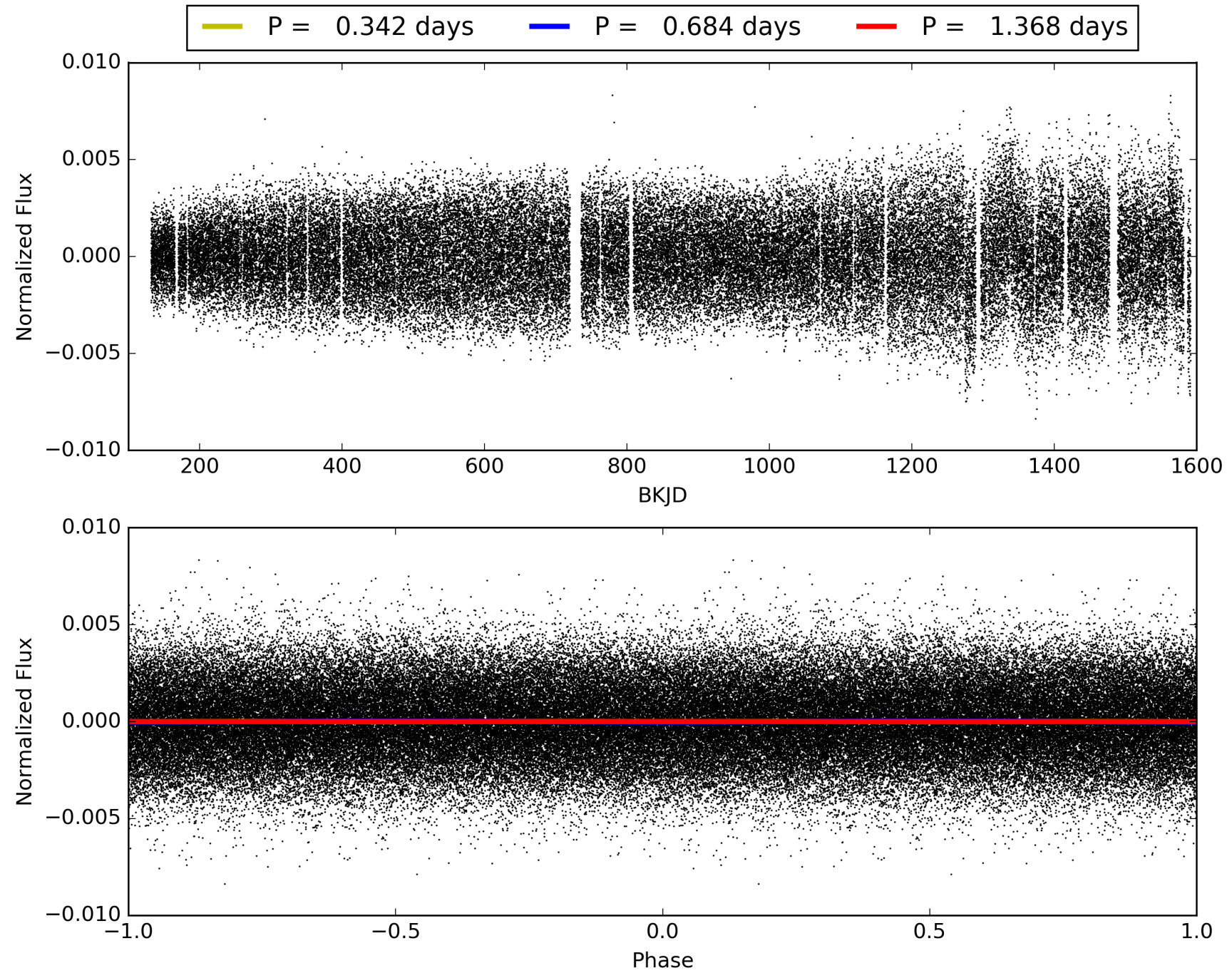
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 05:02:56 Z

This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 006964804-01, PDC Light Curves

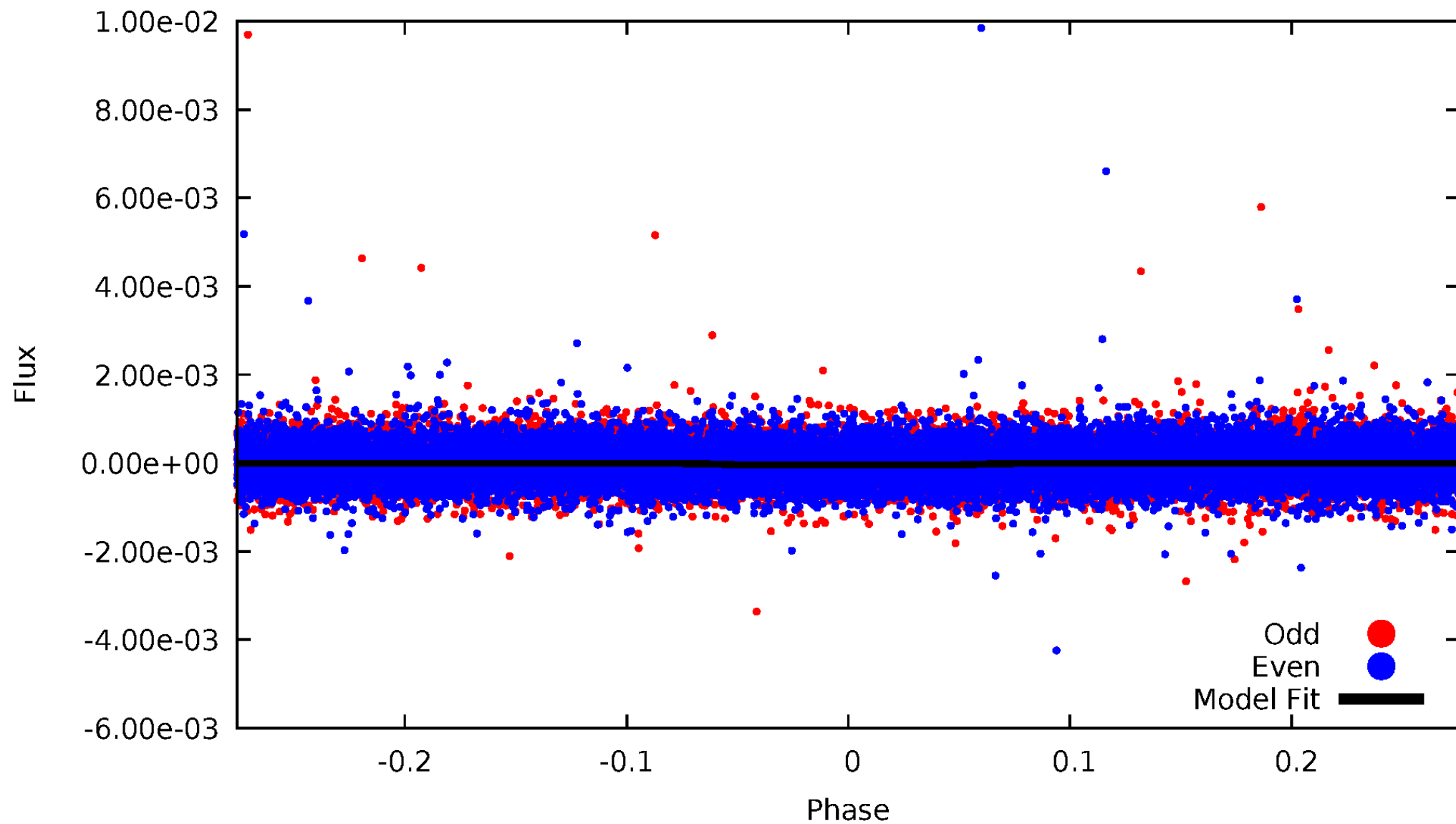


TCE 006964804-01



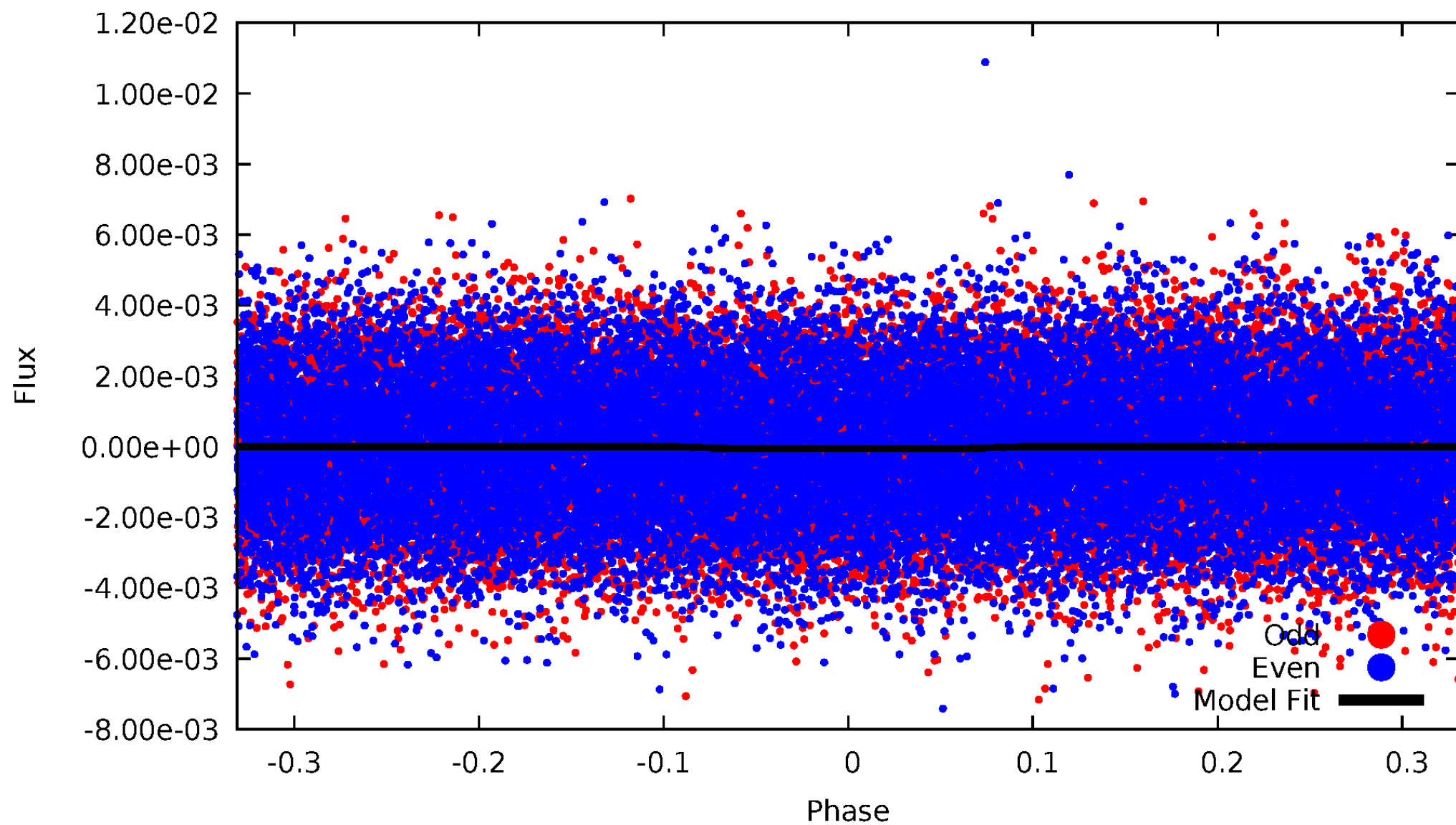
DV Odd/Even

TCE 006964804-01



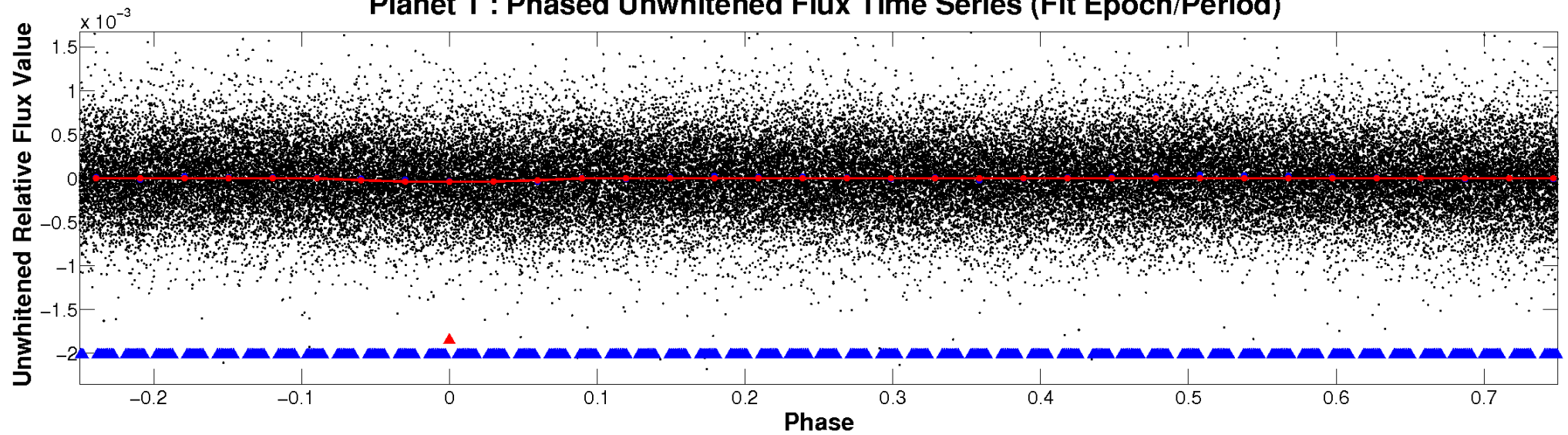
ALT Odd/Even

TCE 006964804-01

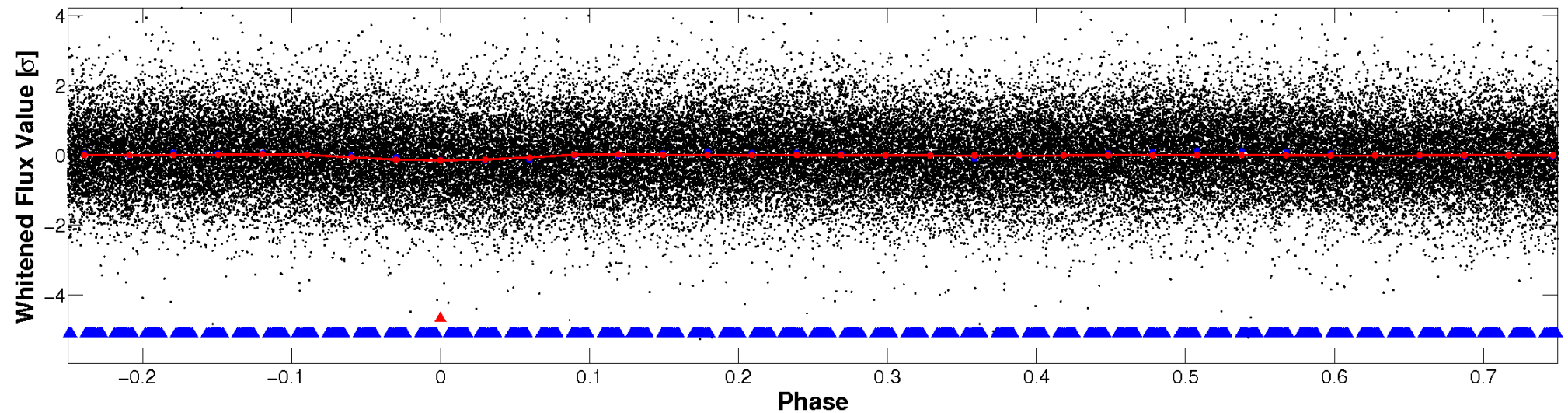


Non-Whitened Vs. Whitened Light Curve

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

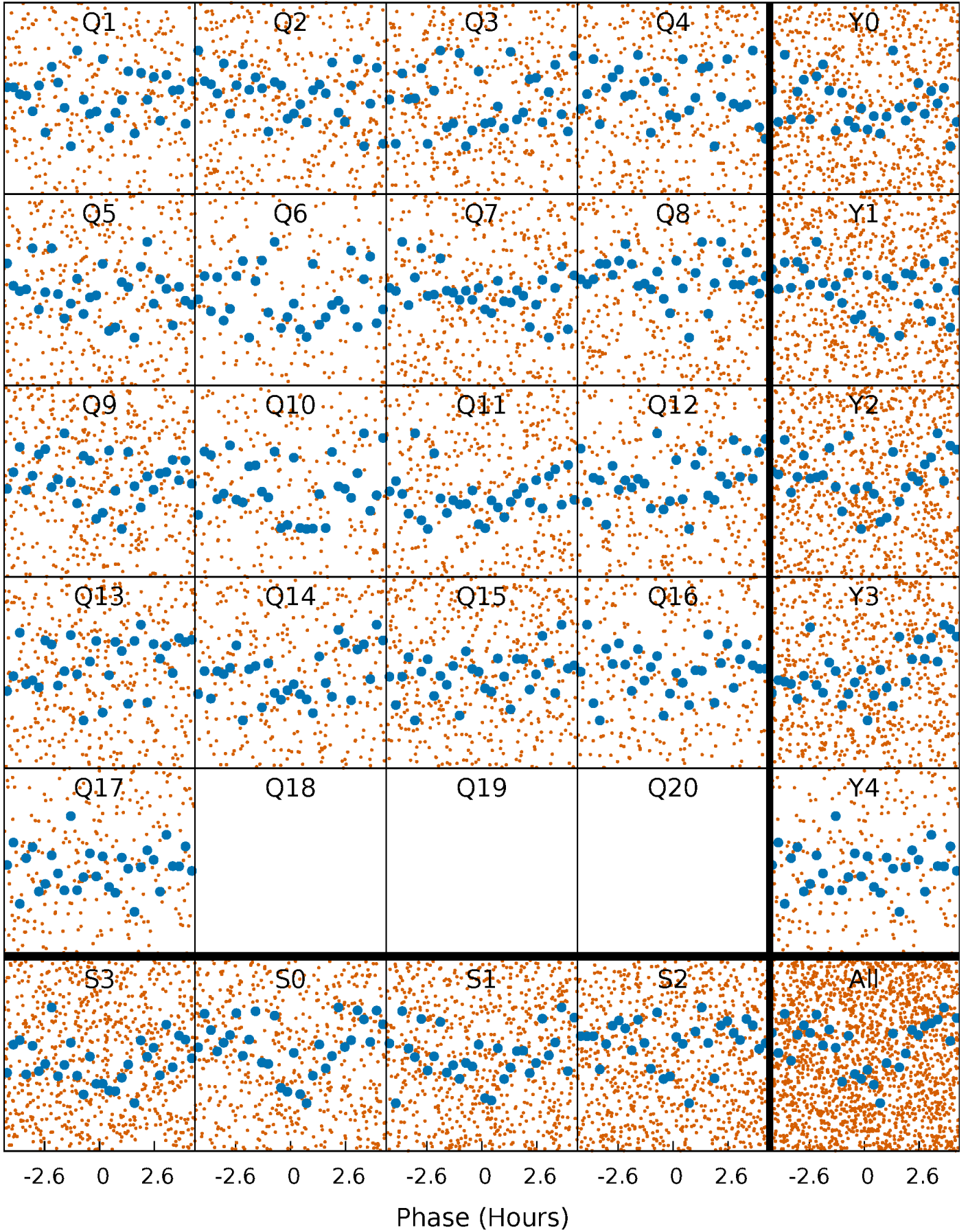


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



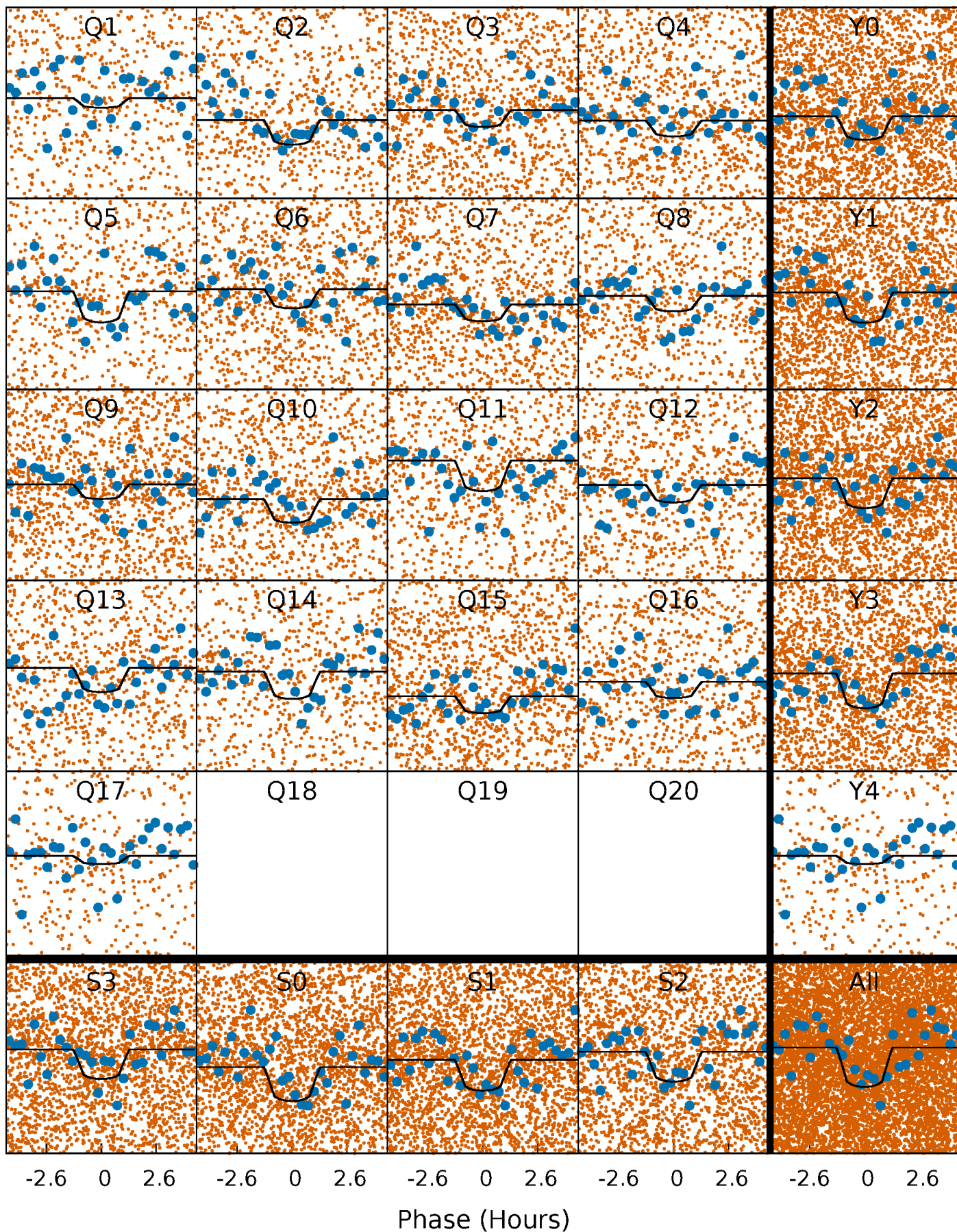
PDC Quarter-Phased Transit Curves

TCE 006964804-01 P= 0.683988 Days $T_0=131.968059$ (BKJD)



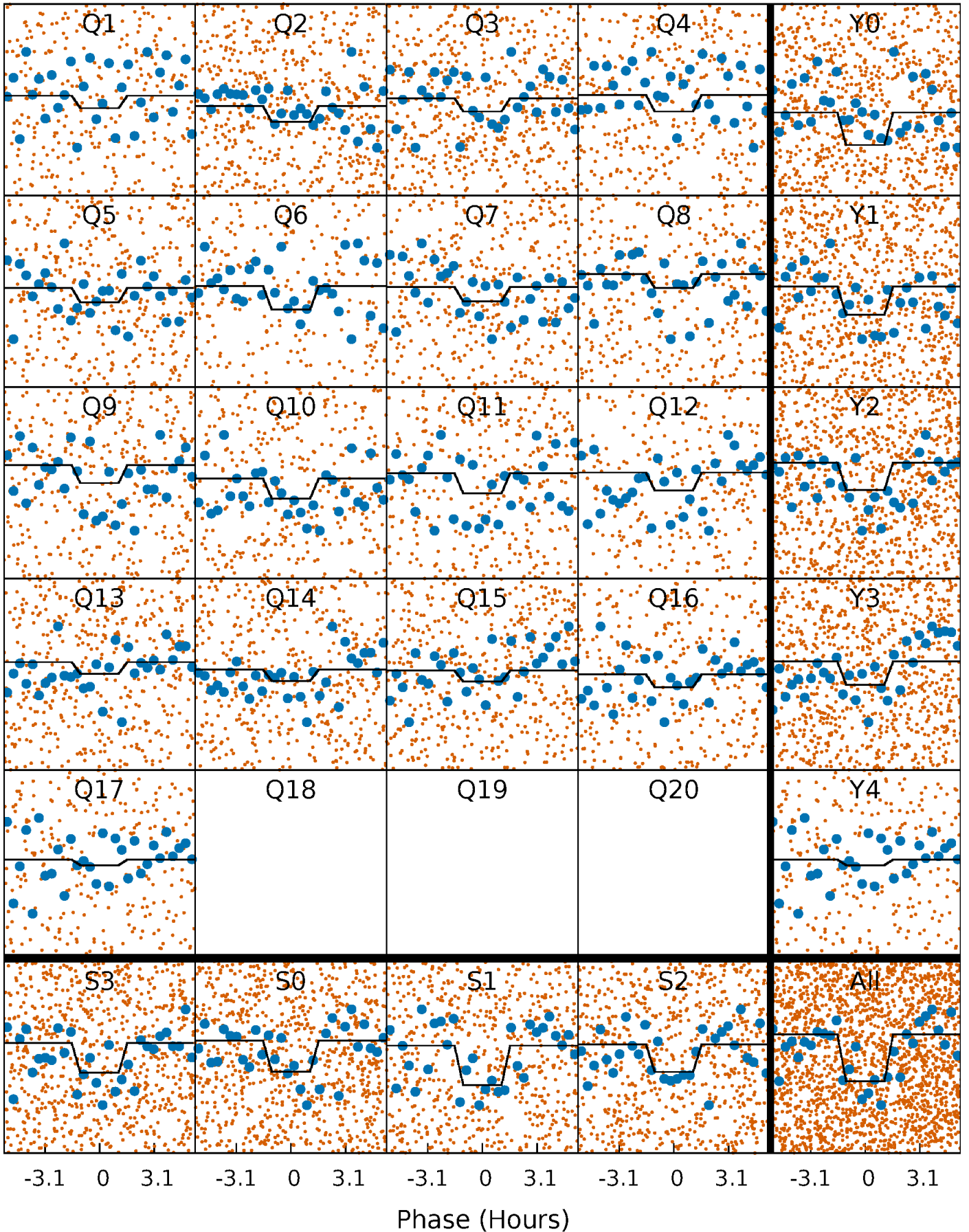
DV Quarter-Phased Transit Curves

TCE 006964804-01 P= 0.683988 Days $T_0=131.968059$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

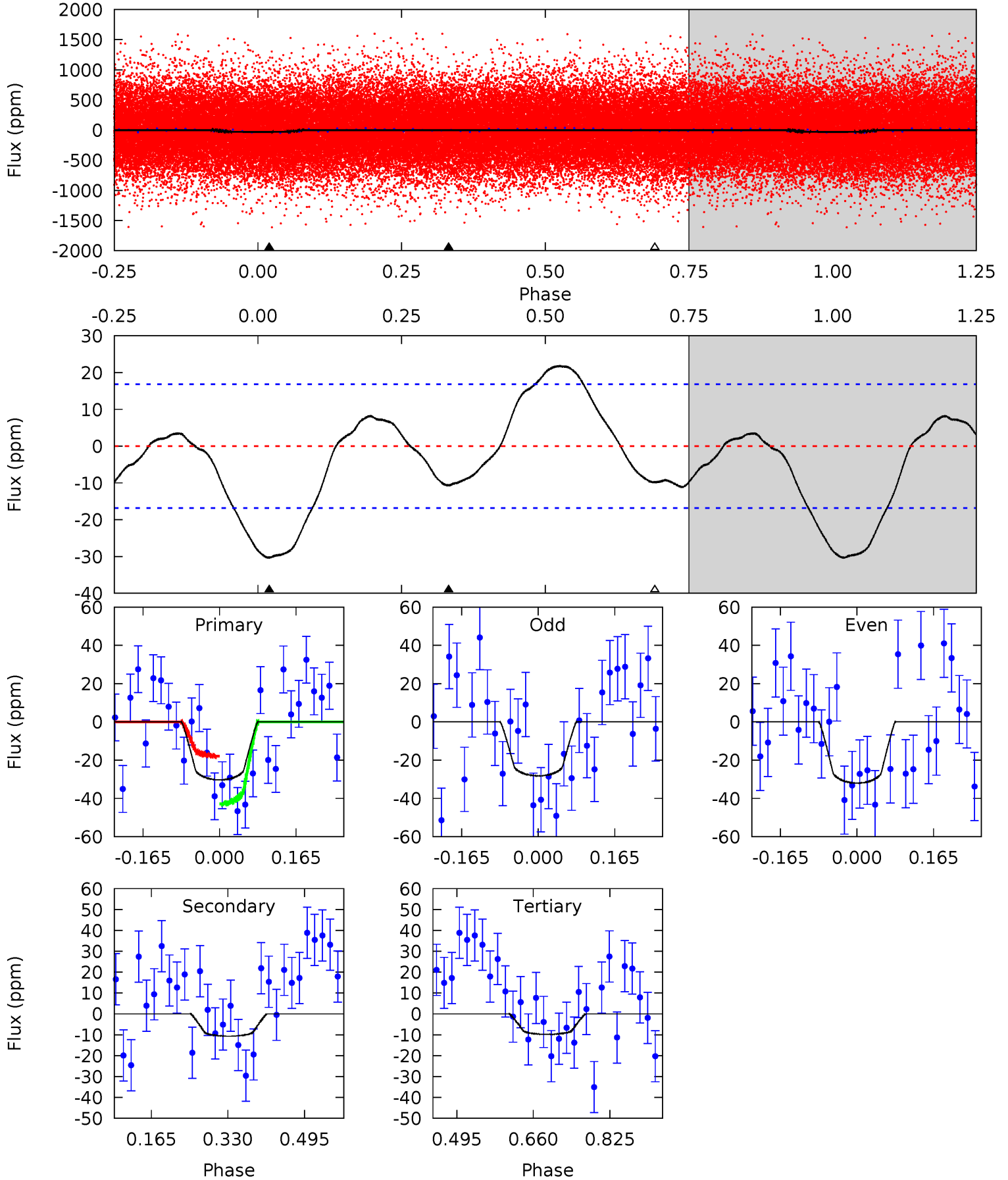
TCE 006964804-01 P= 0.683997 Days $T_0=131.955020$ (BKJD)



DV Model-Shift Uniqueness Test

006964804-01, P = 0.683988 Days, E = 131.284071 Days

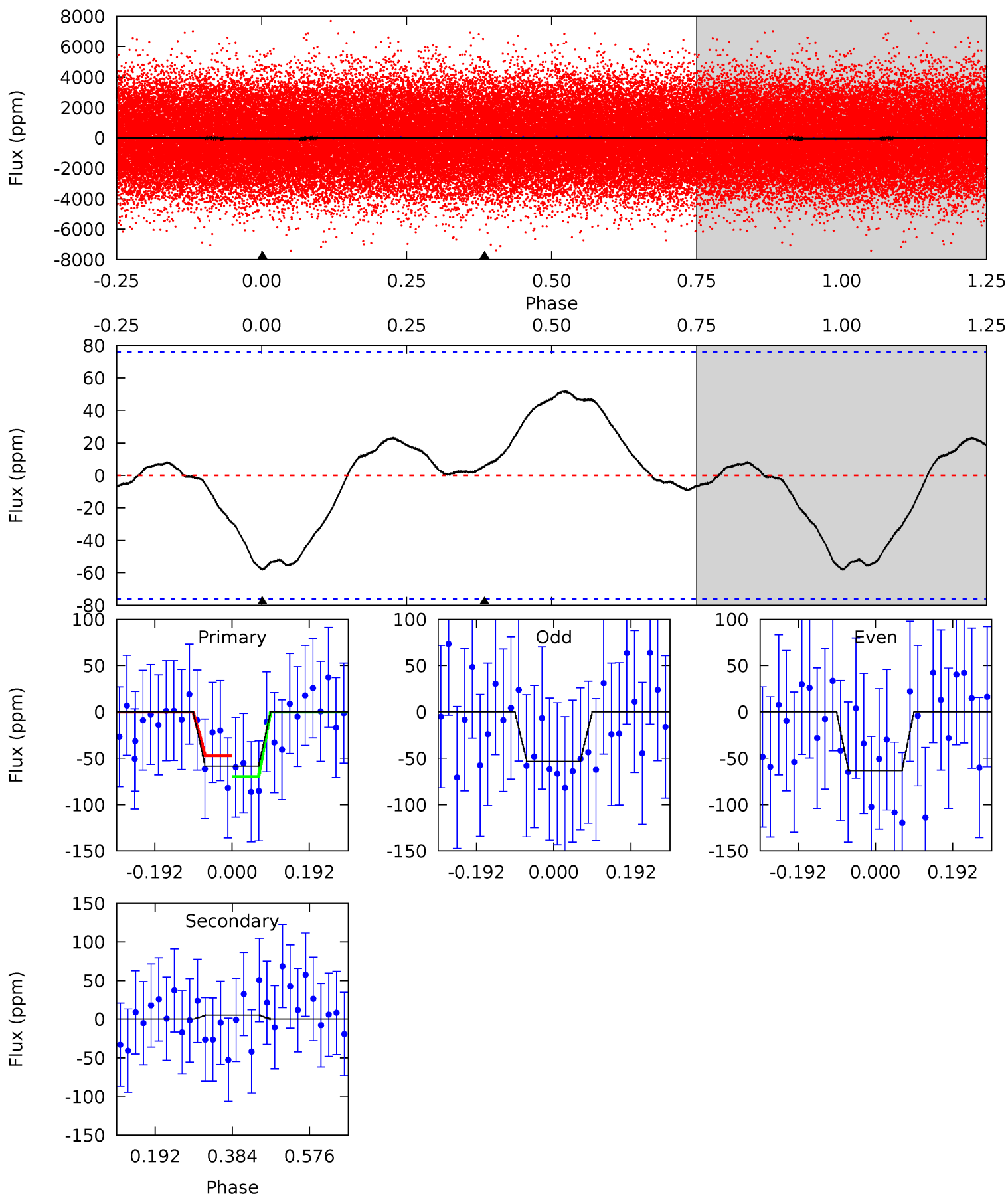
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.02	2.83	2.59	0	4.46	1.39	2.95	5.43	8.02	0.23	2.83	0.50	0.93	0.42	3.26



Alt Model-Shift Uniqueness Test

006964804-01, P = 0.683997 Days, E = 131.271023 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.40	-0.30	0	0	4.43	1.30	0.88	3.40	3.40	-0.30	-0.30	0.29	1.02	0.47	0.65



Stellar Parameters For KIC 006964804

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	8048^{+224}_{-337}	$3.725^{+0.442}_{-0.104}$	$-0.100^{+0.200}_{-0.350}$	$3.251^{+0.758}_{-1.517}$	$2.046^{+0.333}_{-0.500}$	$0.084^{+0.350}_{-0.028}$
	+3%/-4%	+12%/-3%	+200%/-350%	+23%/-47%	+16%/-24%	+417%/-33%
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 006964804-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-11 ± 4	$2.10^{+1.21}_{-0.96}$	6175^{+500}_{-697}	4388^{+2581}_{-8617}	$0.484^{+1.179}_{-0.305}$
Alt.	5 ± 17	$2.24^{+1.44}_{-1.00}$	6142^{+519}_{-717}	-5455^{+10104}_{-1849}	$-0.151^{+0.692}_{-1.085}$

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

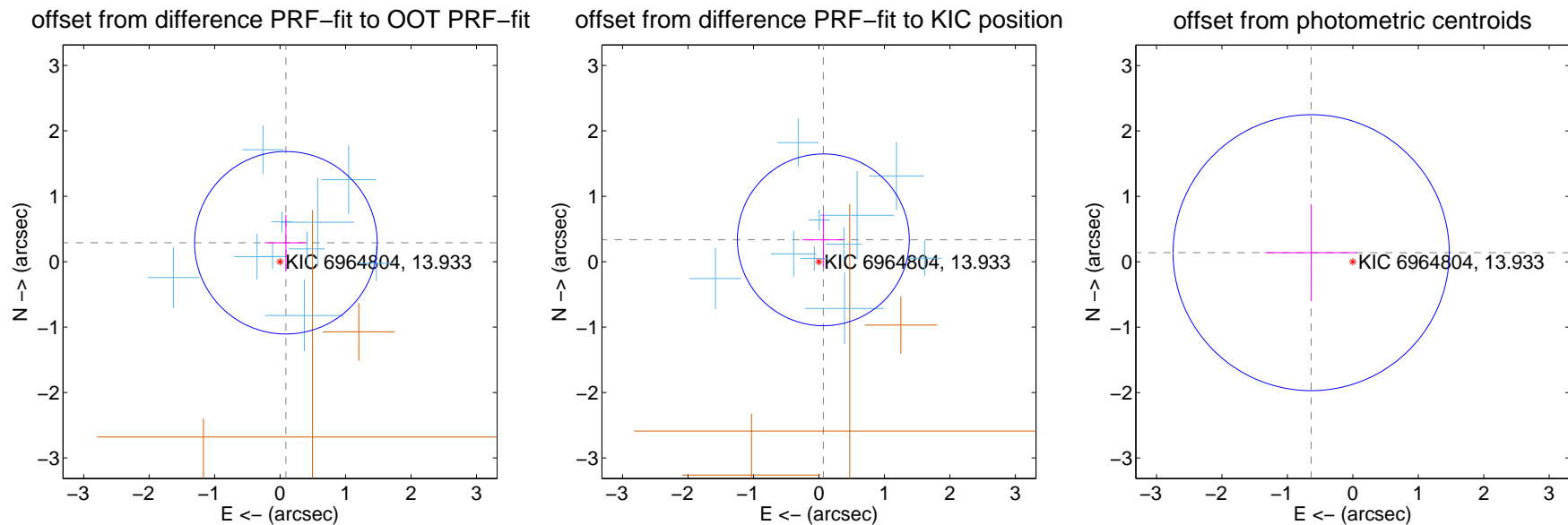
DV Centroid Data

Supplemental centroid analysis for 006964804-01. Kepler magnitude: 13.93. Transit SNR 10.67

There are 10 quarters with good PRF difference image offsets

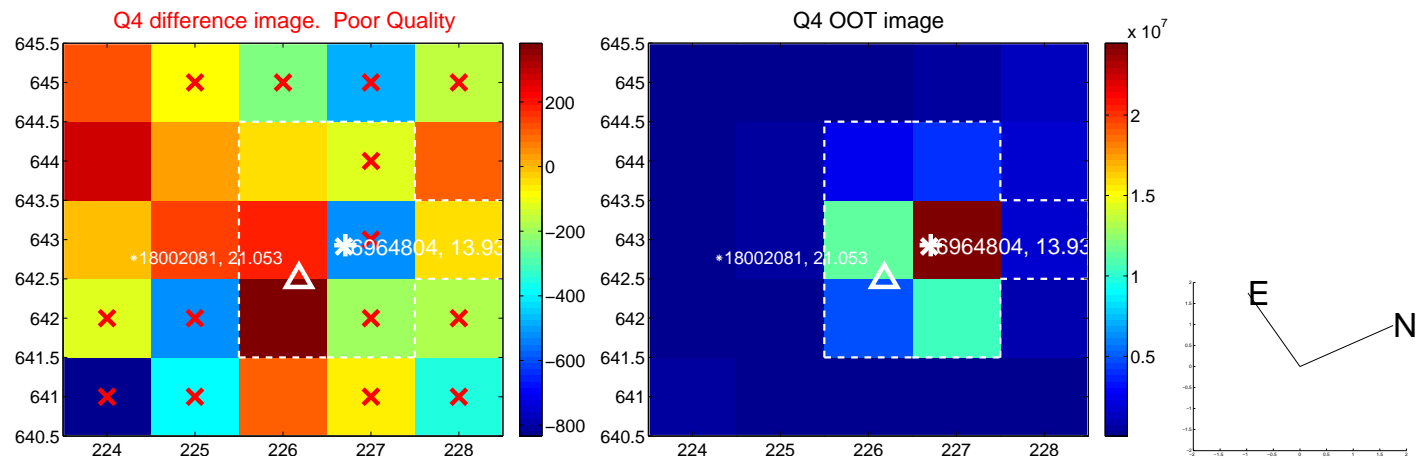
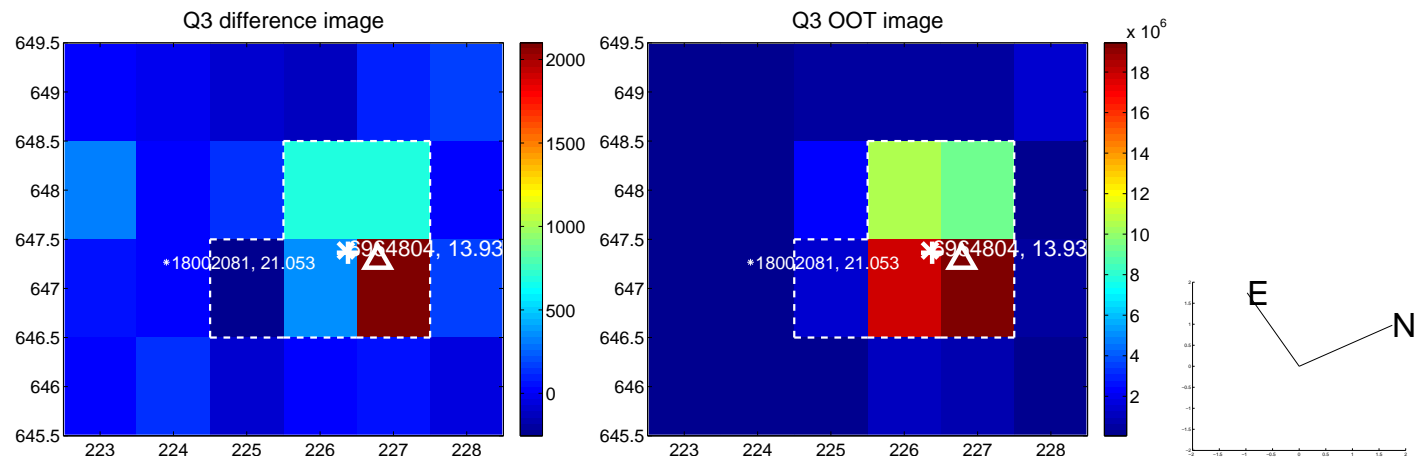
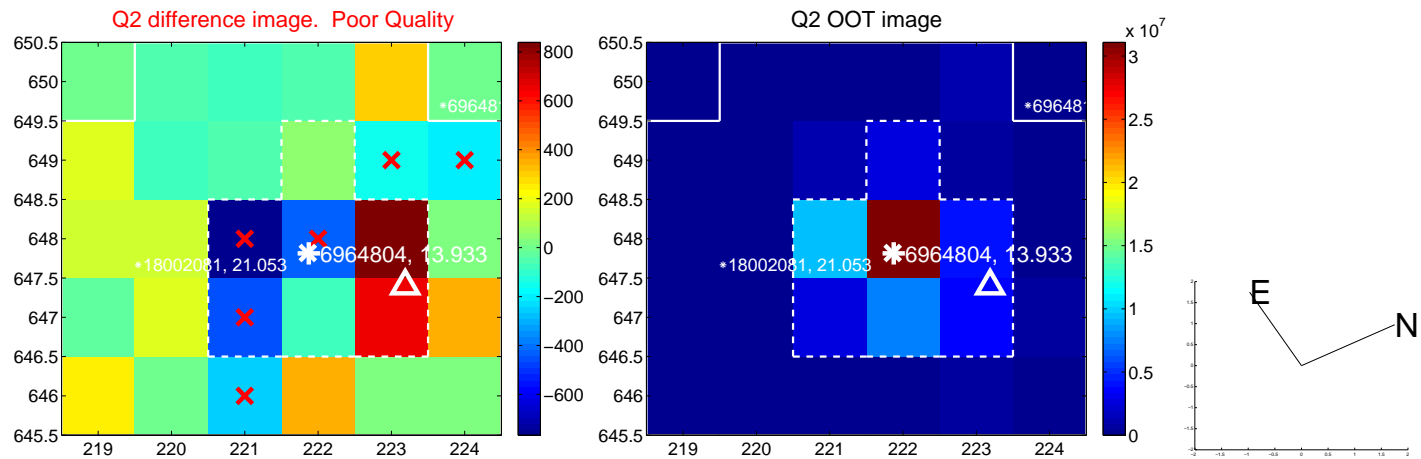
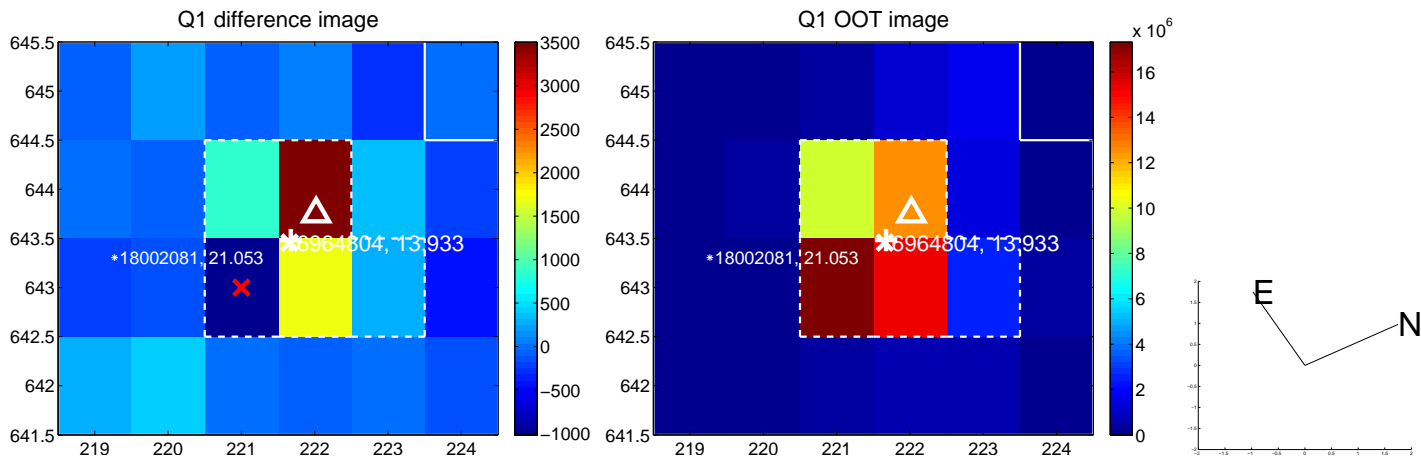
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.303 ± 0.465	0.65	-0.088 ± 0.326	0.290 ± 0.428
PRF-fit source offset from KIC position	0.341 ± 0.438	0.78	-0.067 ± 0.323	0.334 ± 0.410
photometric centroid source offset	0.65 ± 0.70	0.93	0.64 ± 0.70	0.14 ± 0.74

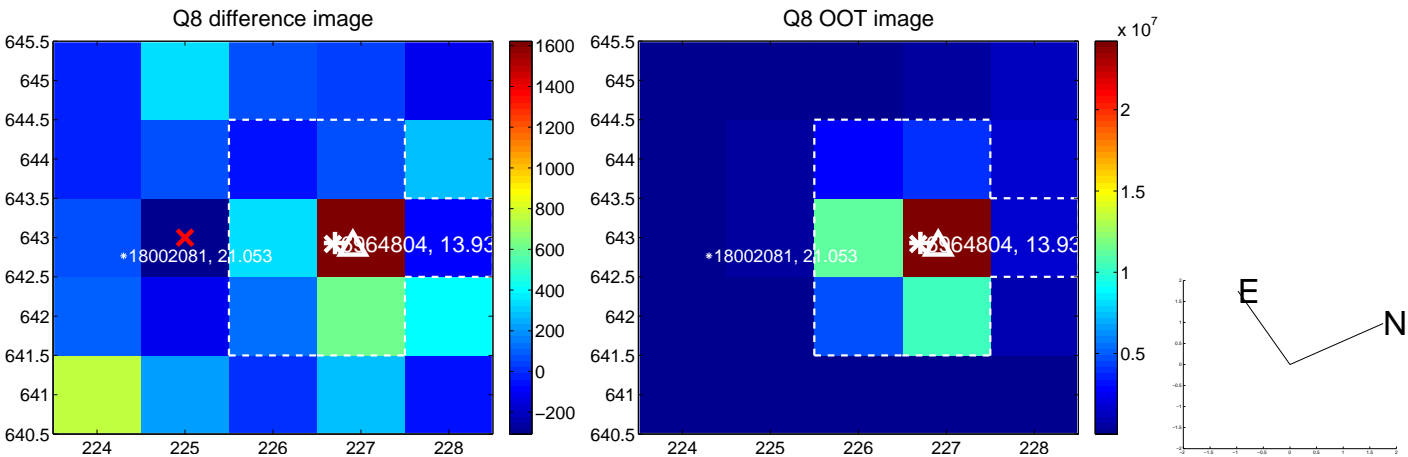
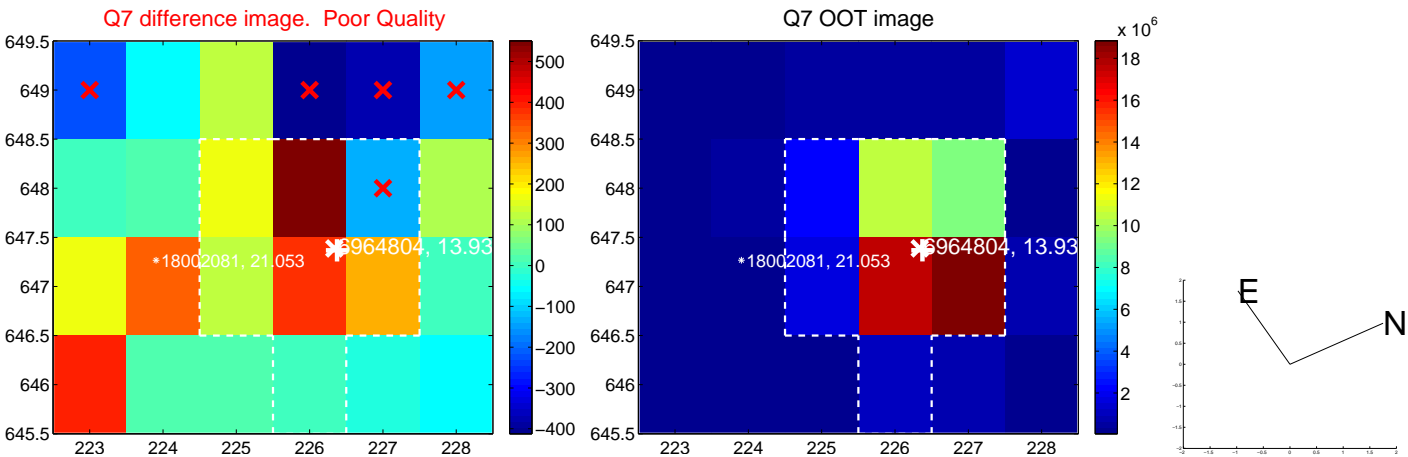
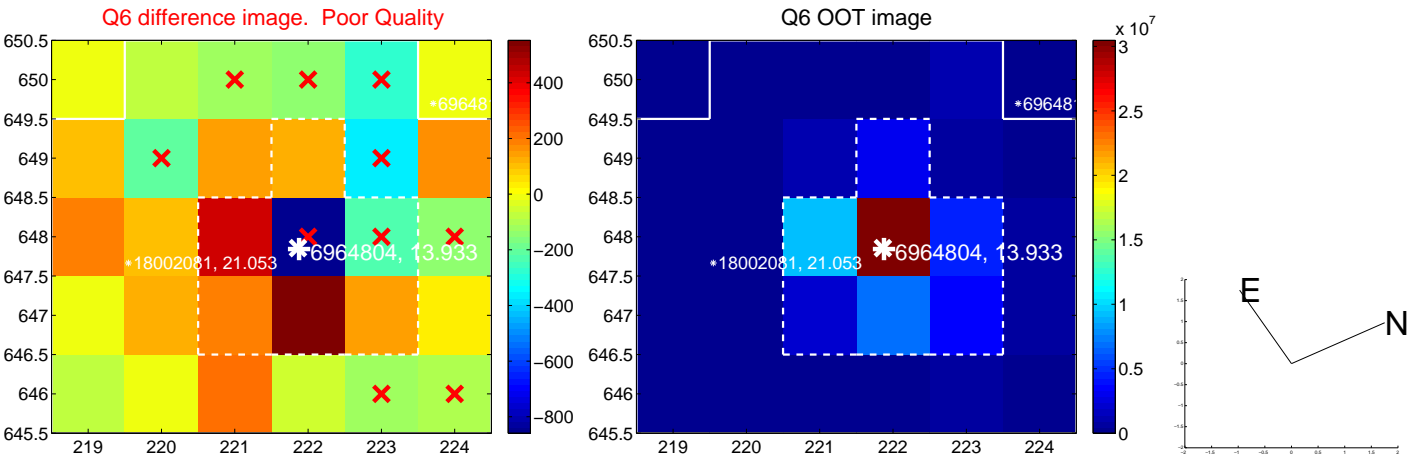
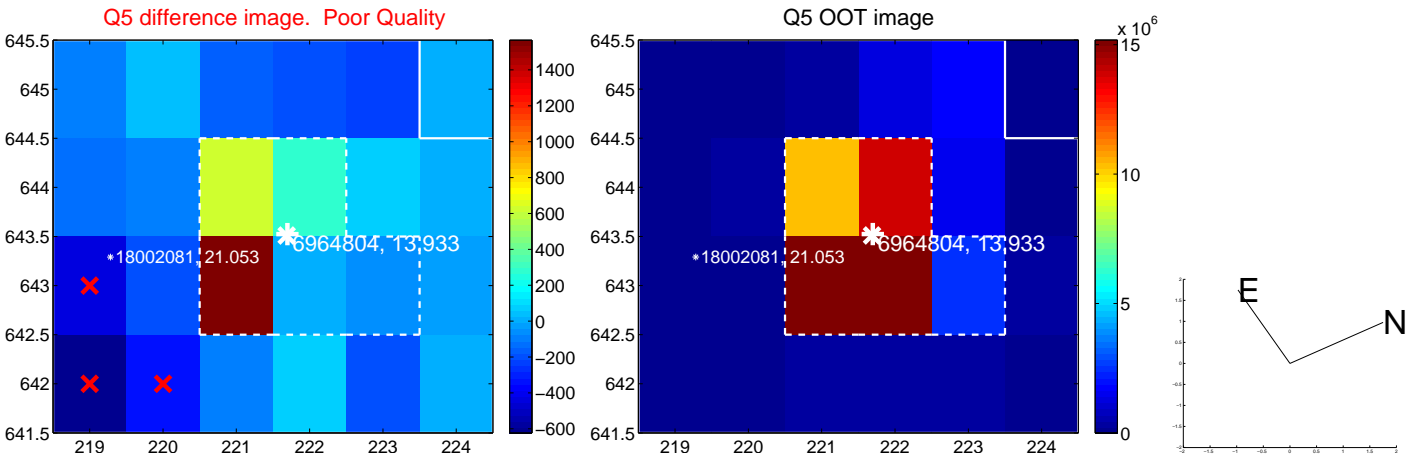


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

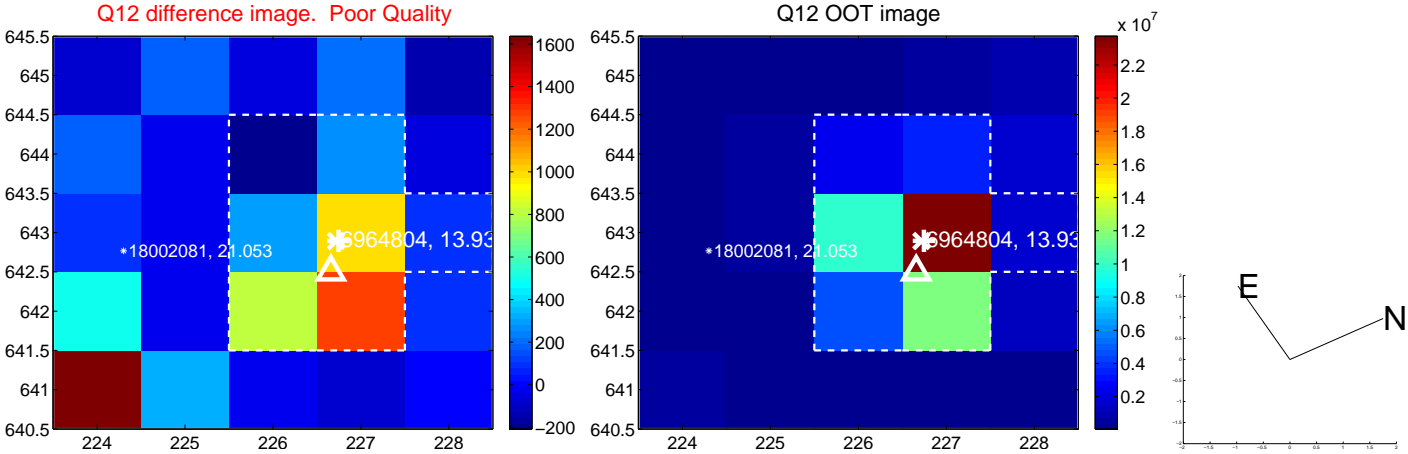
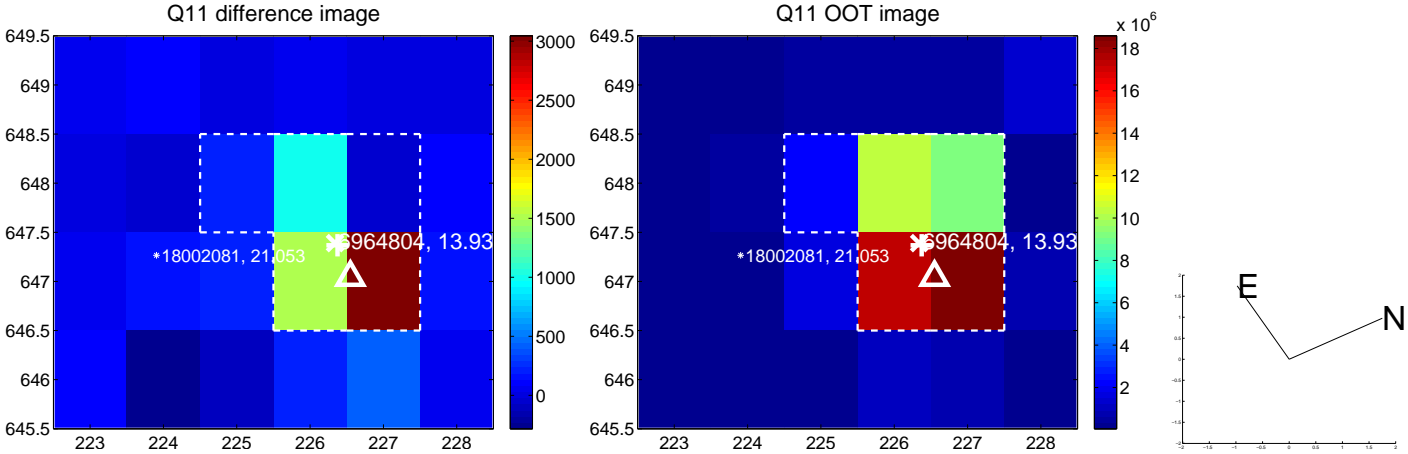
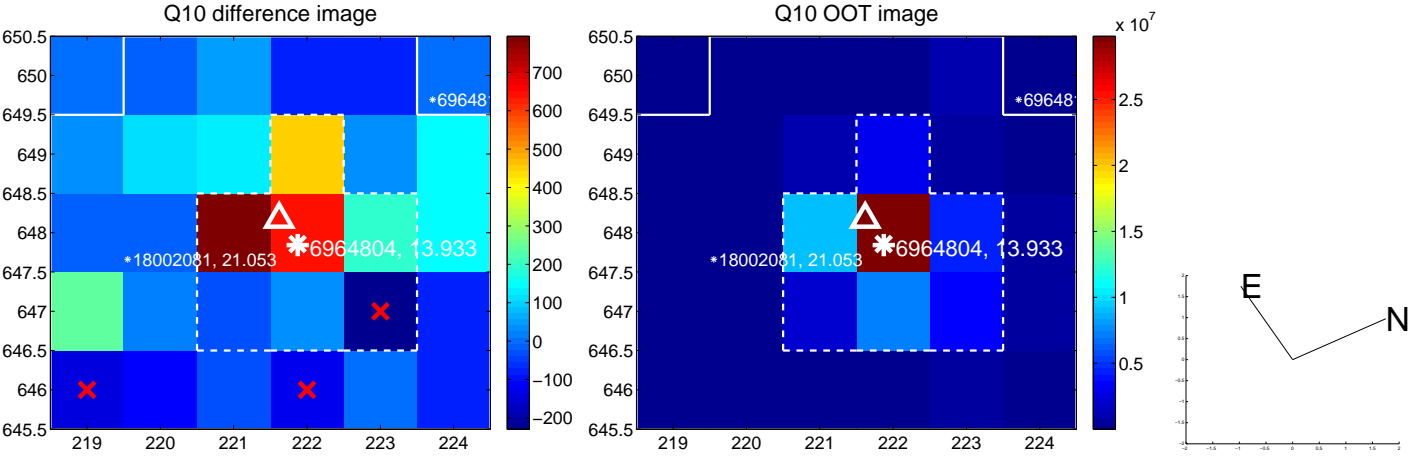
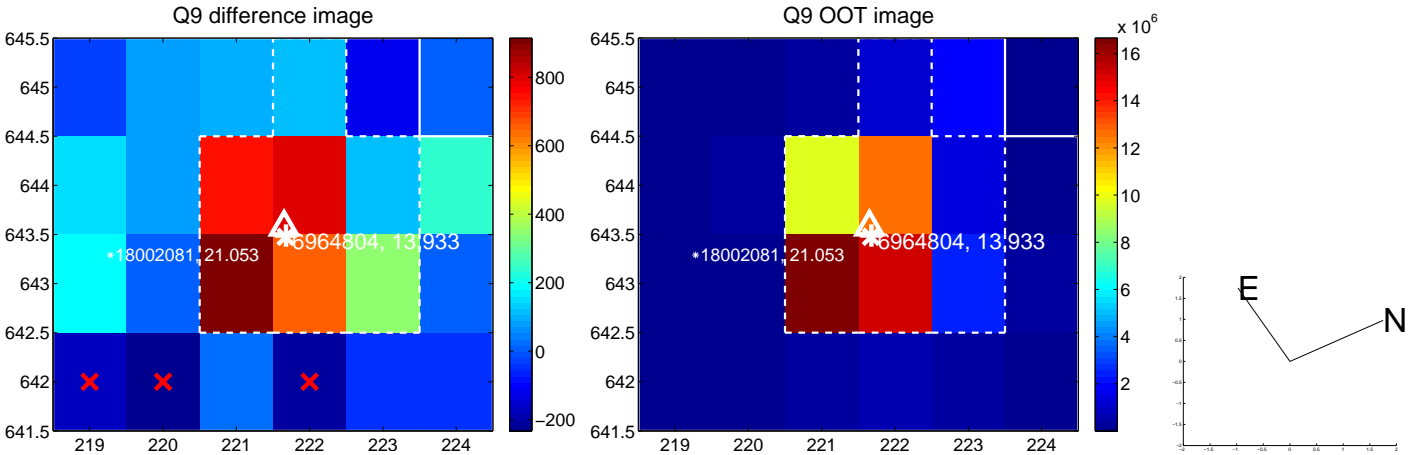
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



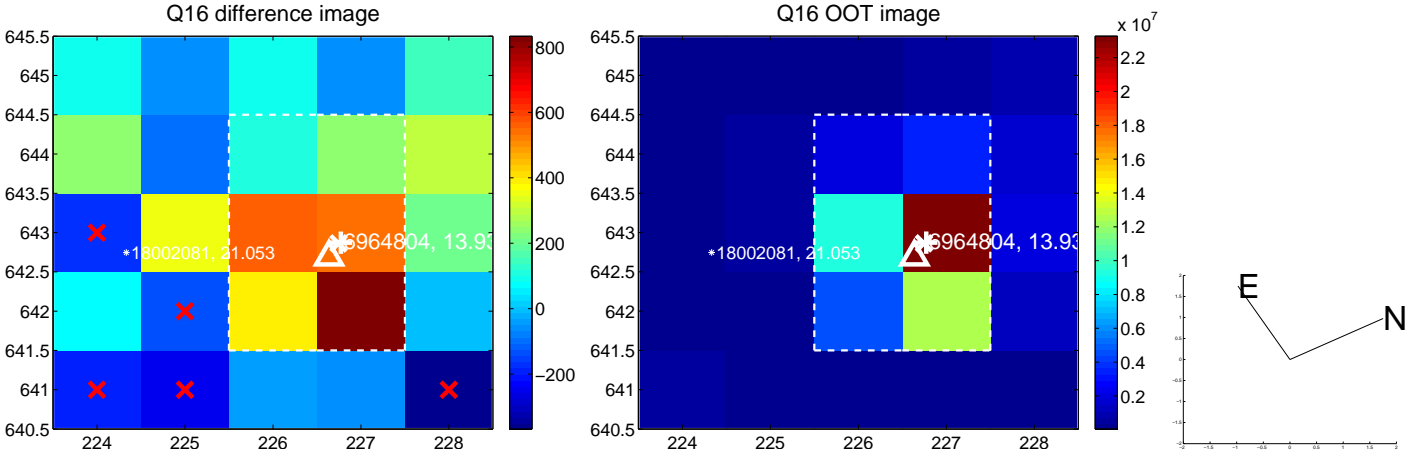
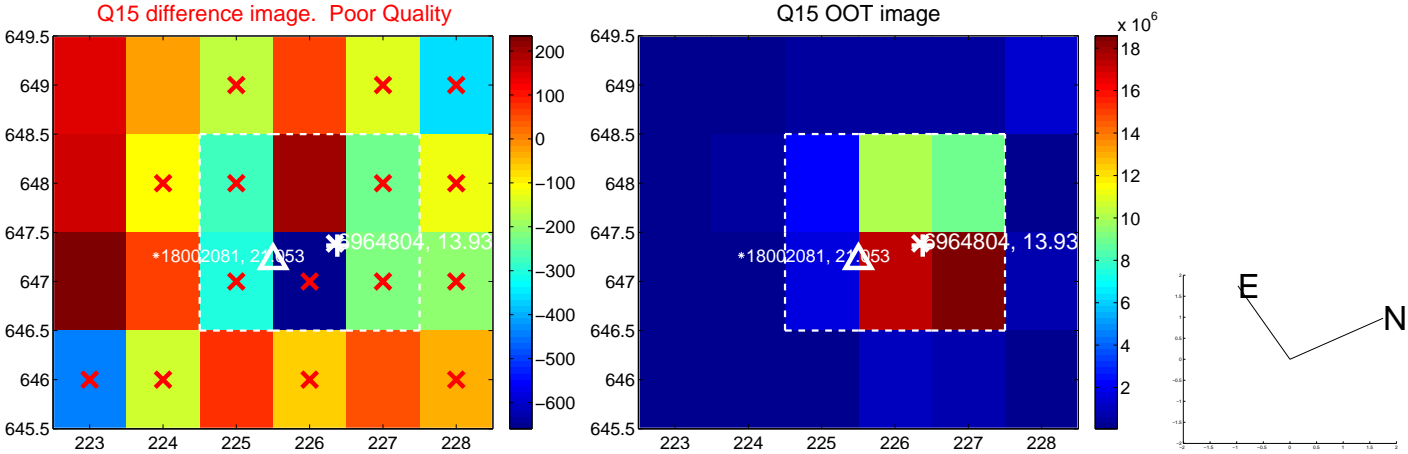
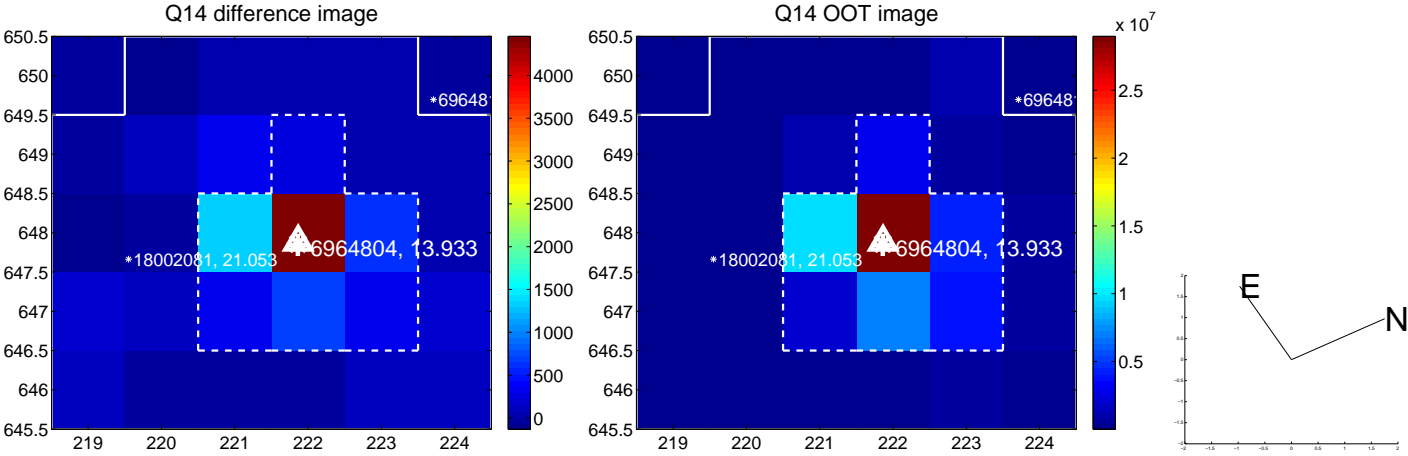
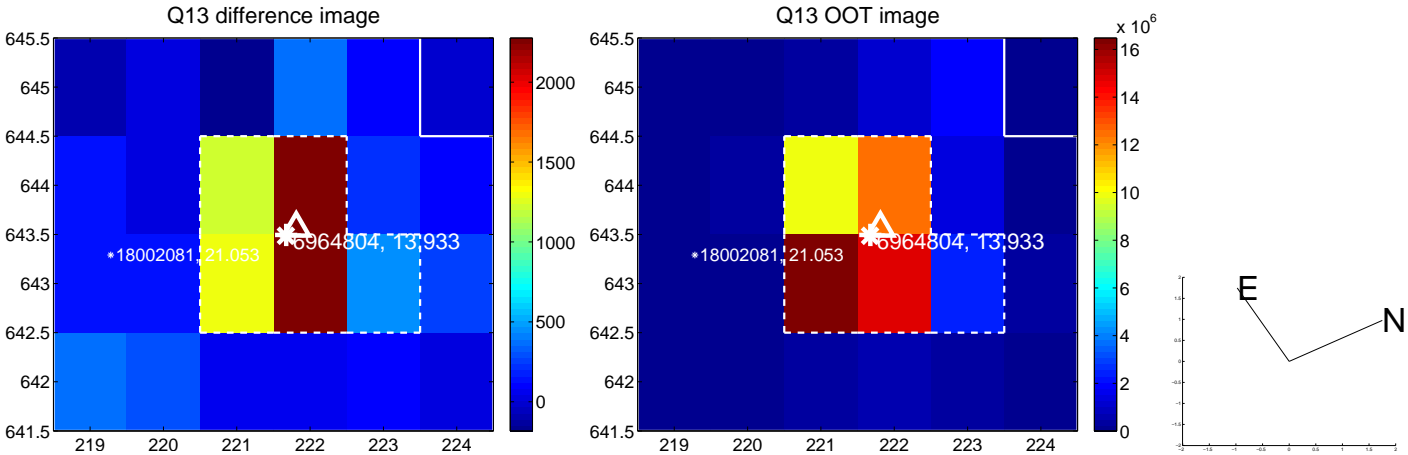
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



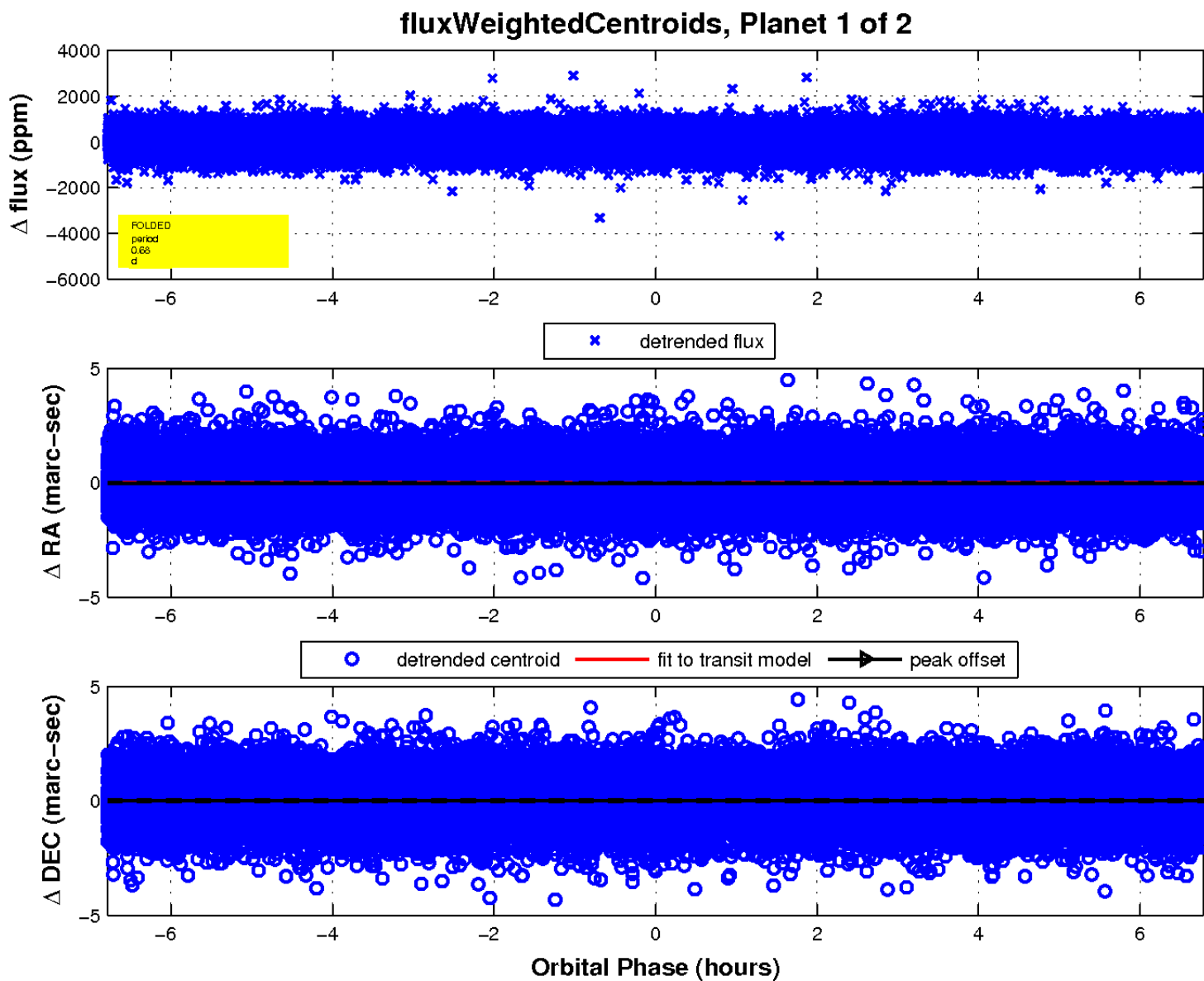
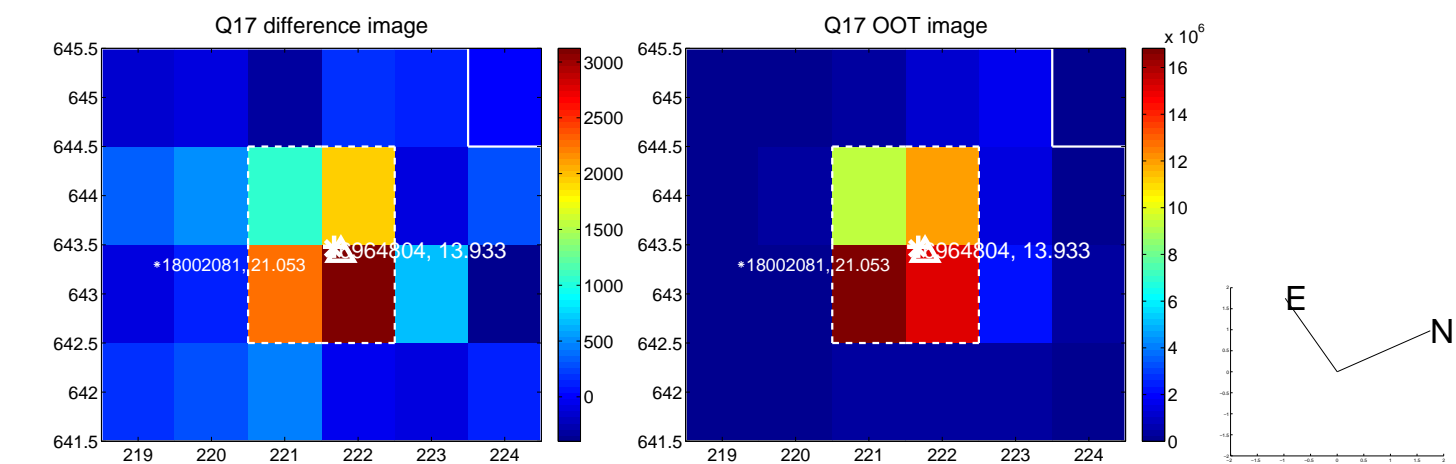
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

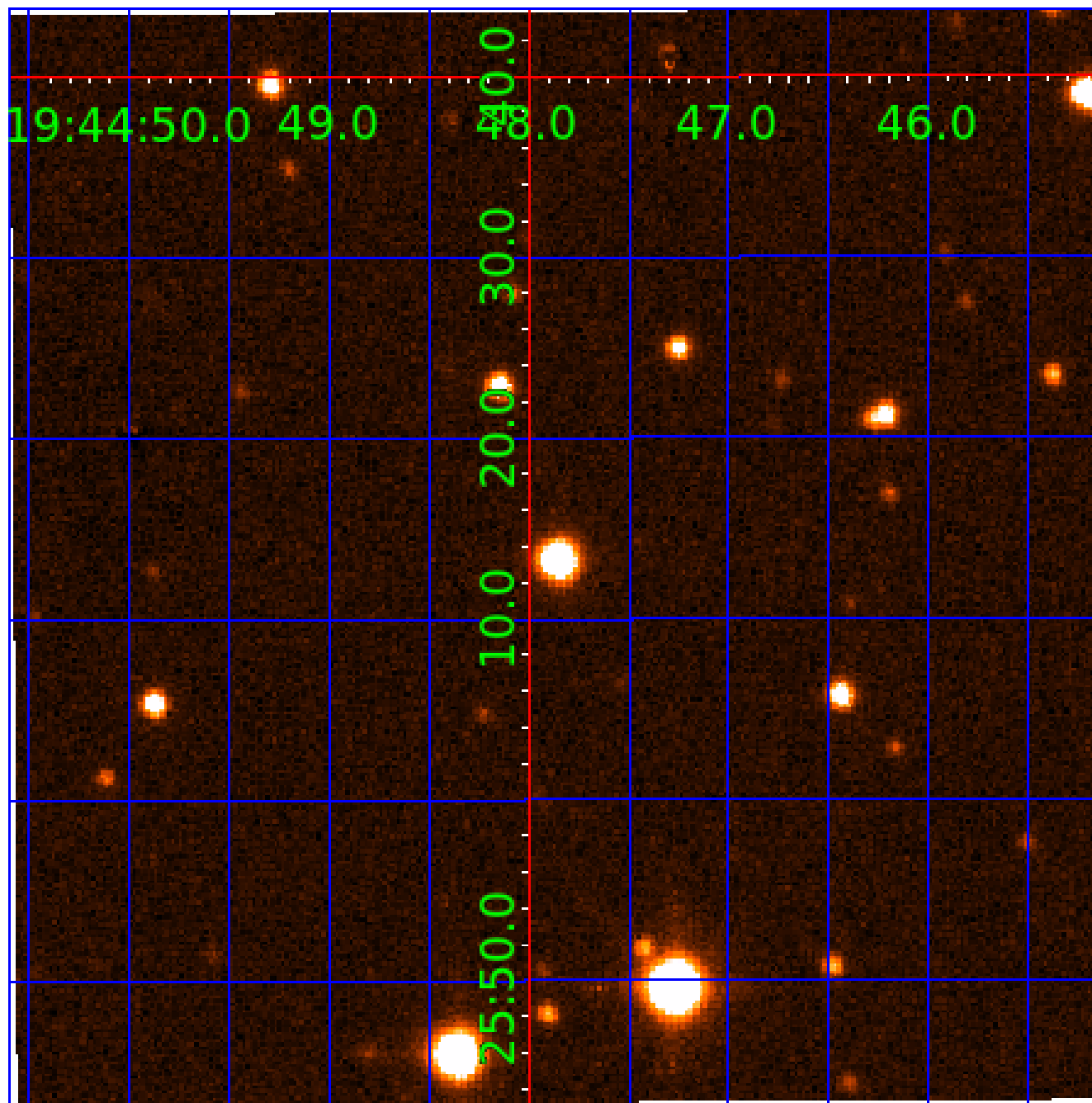


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 006964804

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})
006964804-01	OBS	No	0.683988	131.968059	39.0	2.262	11.1	10.7	3.25	8048	2.35	106723.35
006964804-02	OBS	No	3.266373	131.756974	50.2	9.798	7.4	7.8	3.25	8048	2.65	13270.98

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006964804-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
006964804-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT

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

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

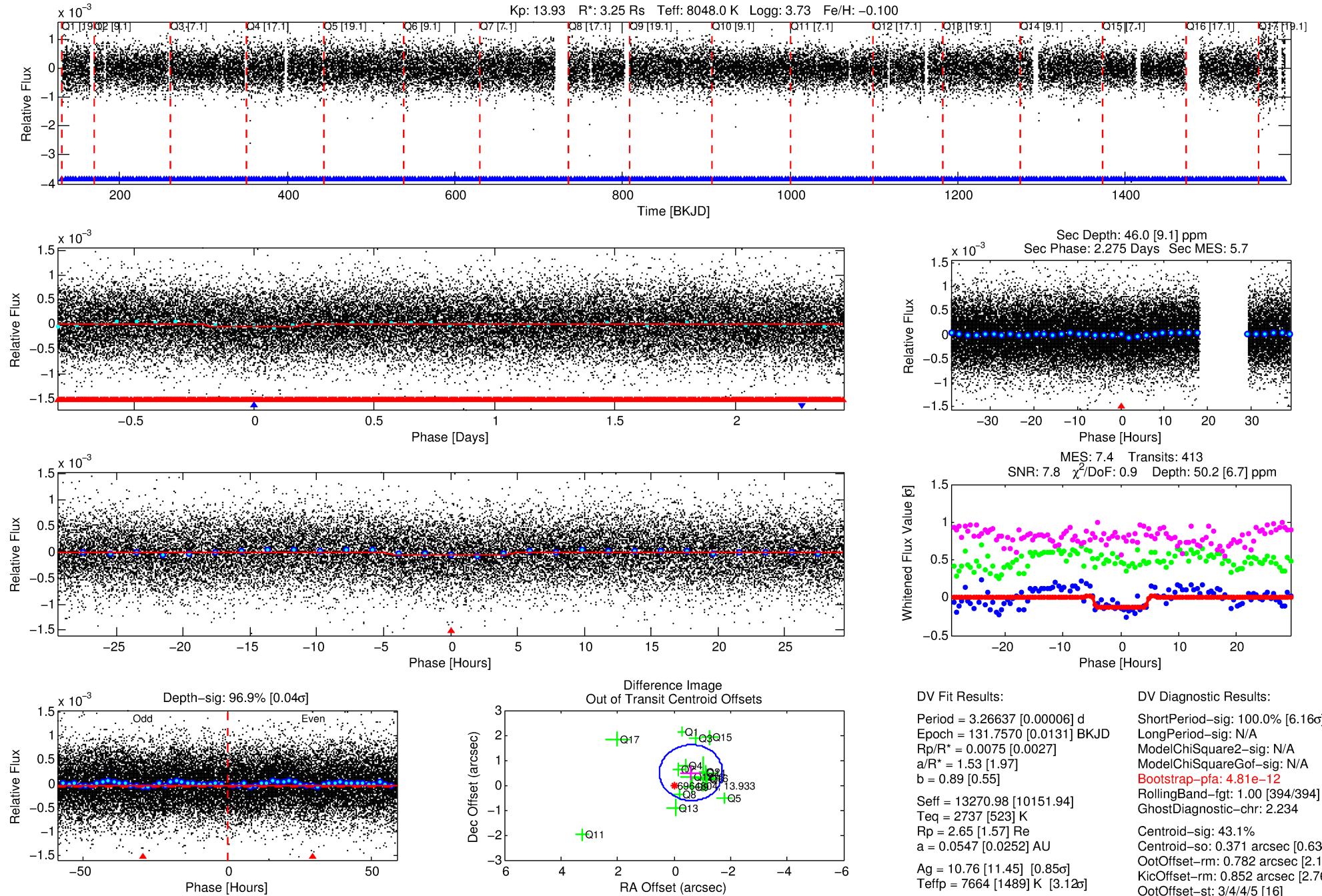
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006964804-02

No Significant Match Found

DV One-Page Summary

KIC: 6964804 Candidate: 2 of 2 Period: 3.266 d



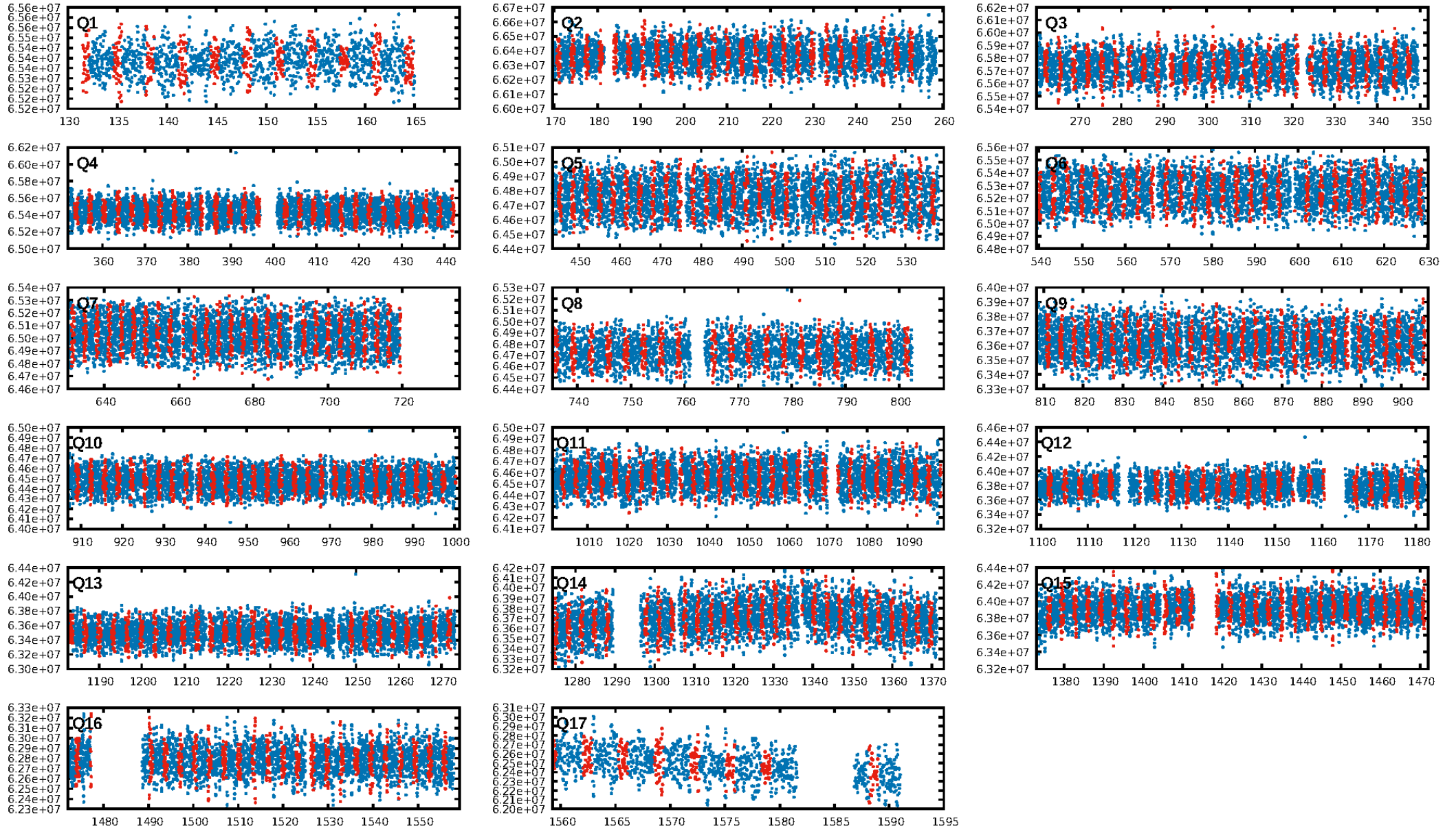
DV Fit Results:

Period = 3.26637 [0.00006] d
Epoch = 131.7570 [0.0131] BKJD
Rp/R* = 0.0075 [0.0027]
a/R* = 1.53 [1.97]
b = 0.89 [0.55]
Seff = 13270.98 [10151.94]
Teff = 2737 [523] K
Rp = 2.65 [1.57] Re
a = 0.0547 [0.0252] AU
Ag = 10.76 [11.45] [0.85 σ]
Teffp = 7664 [1489] K [3.12 σ]

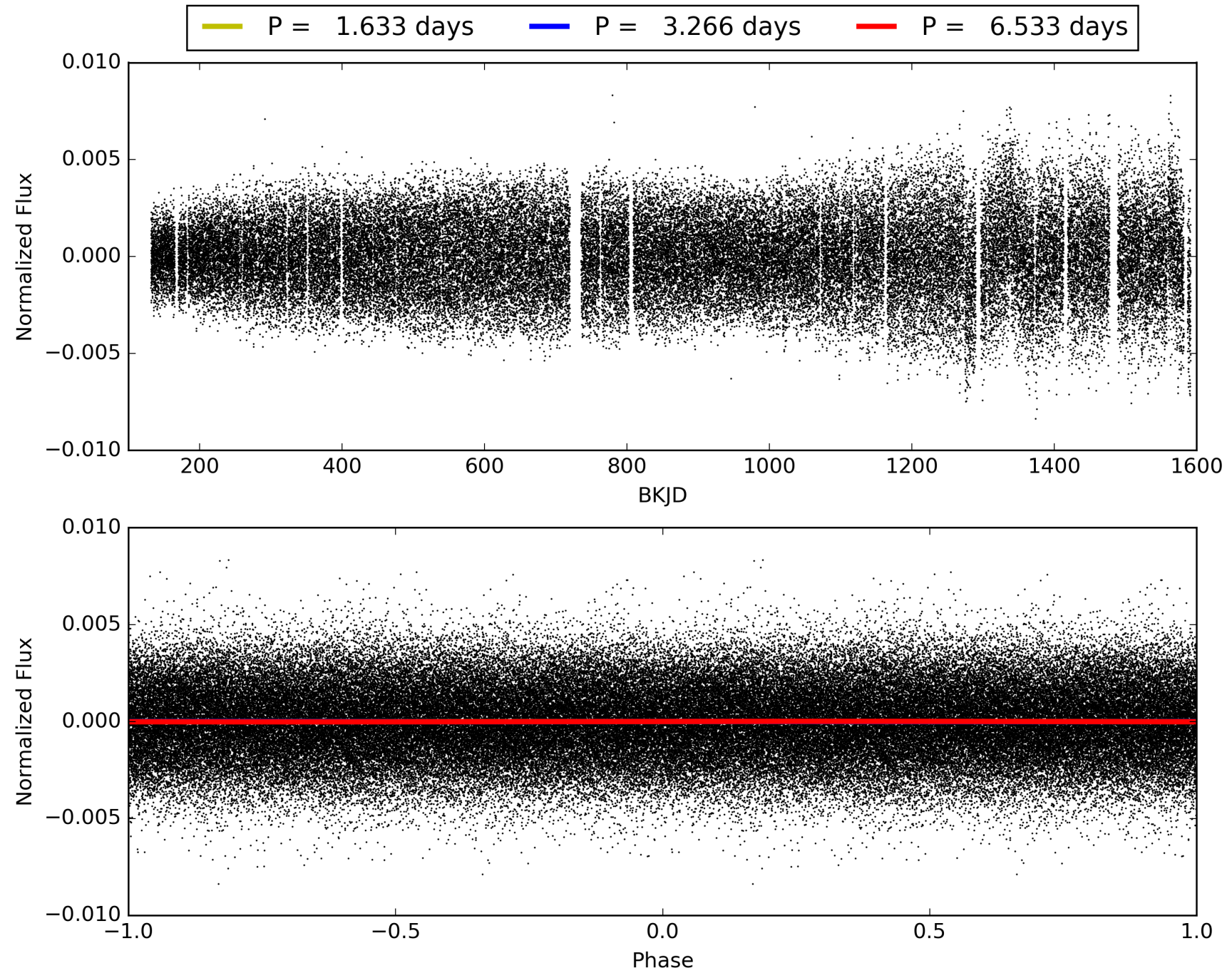
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [6.16 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 4.81e-12
RollingBand-fgt: 1.00 [394/394]
GhostDiagnostic-chr: 2.234
Centroid-sig: 43.1%
Centroid-so: 0.371 arcsec [0.63 σ]
OotOffset-rm: 0.782 arcsec [2.10 σ]
KicOffset-rm: 0.852 arcsec [2.76 σ]
OotOffset-st: 3/4/4/5 [16]
KicOffset-st: 3/4/4/5 [16]
DiffImageQuality-fgm: 1.00 [16/16]
DiffImageOverlap-fno: 0.00 [0/17]

TCE 006964804-02, PDC Light Curves

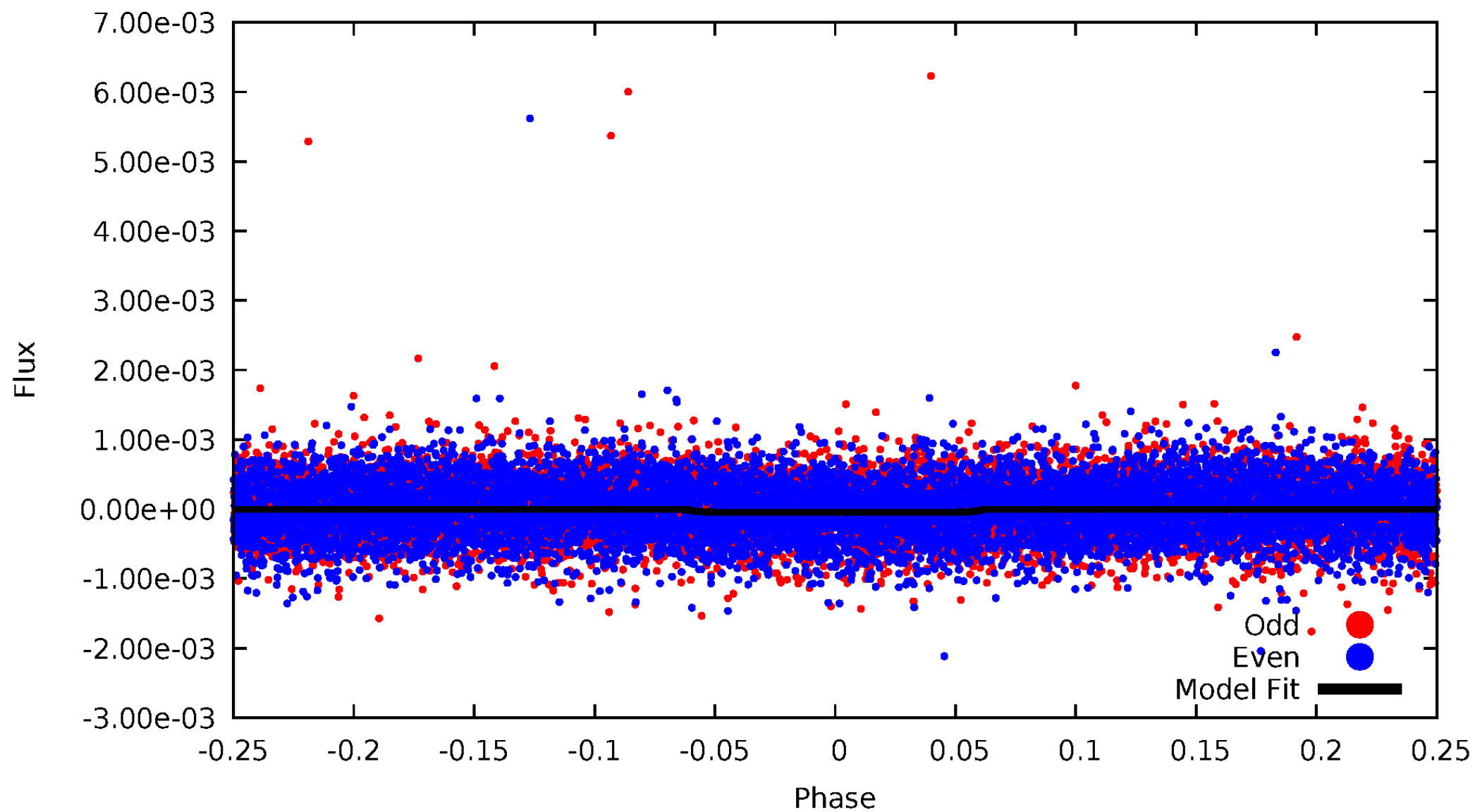


TCE 006964804-02



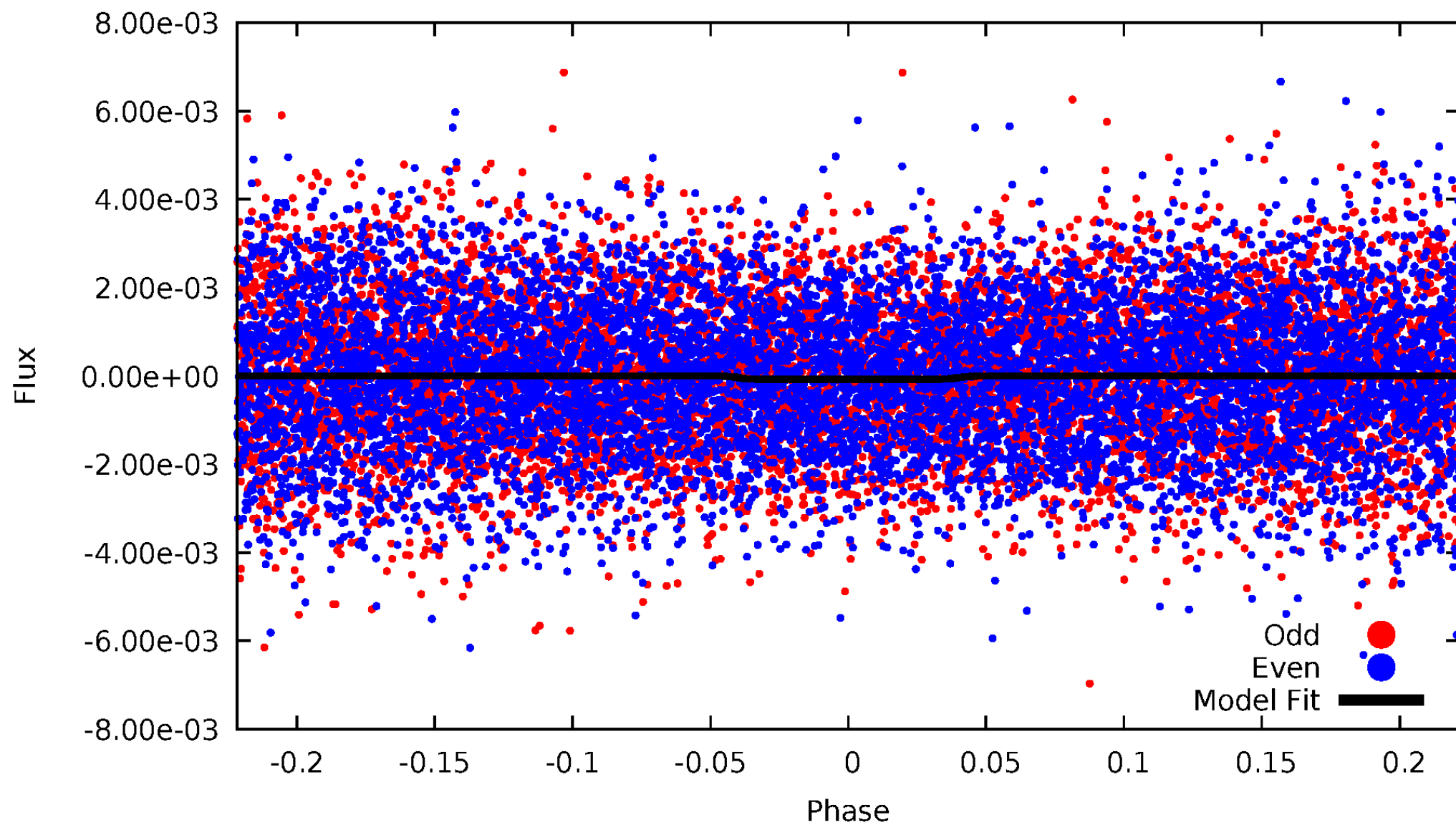
DV Odd/Even

TCE 006964804-02



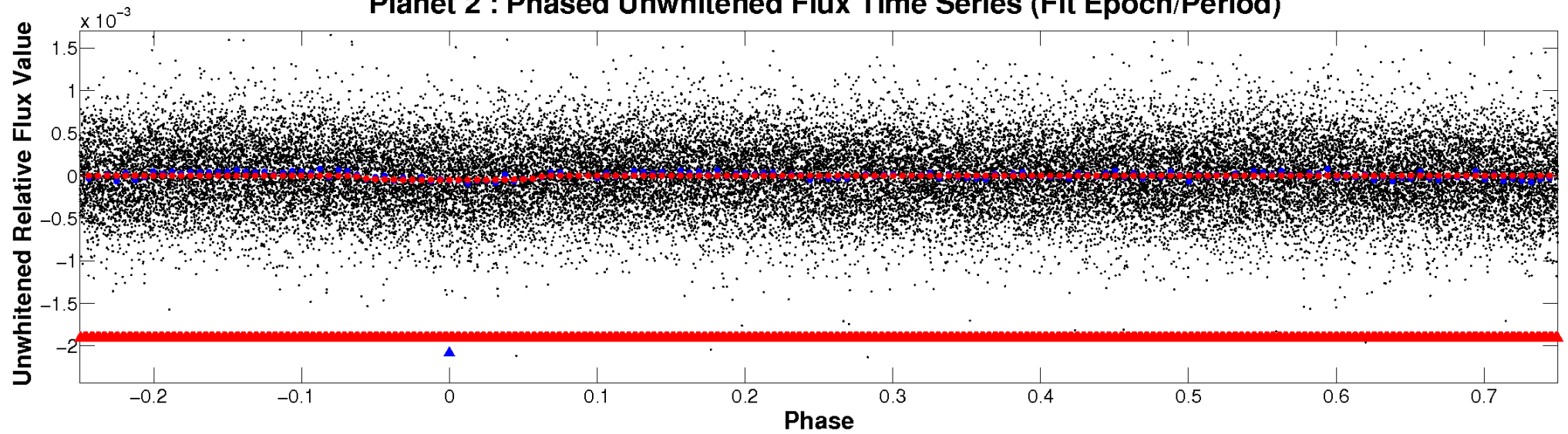
ALT Odd/Even

TCE 006964804-02

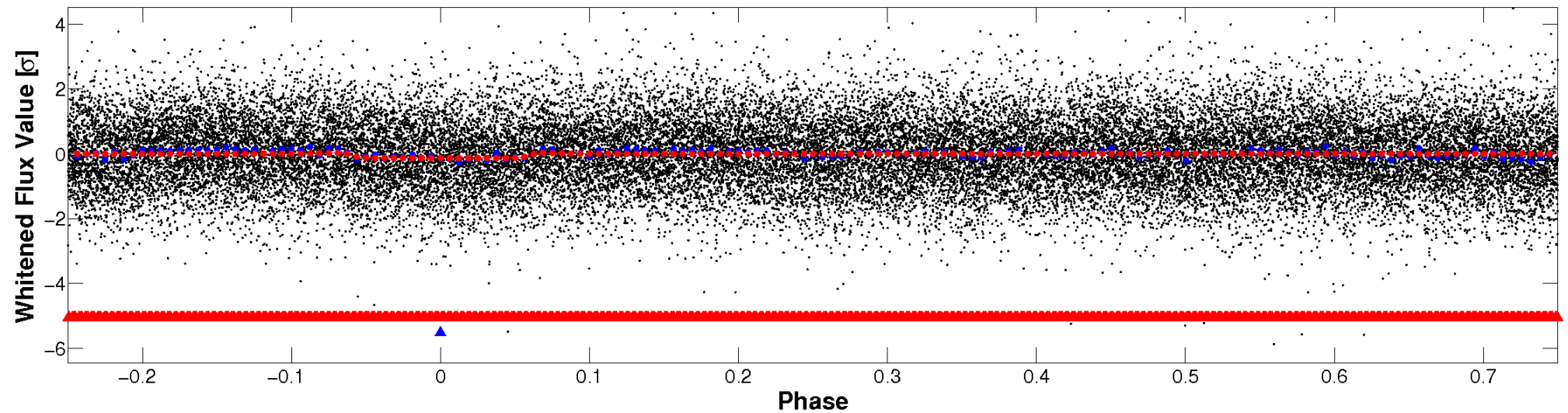


Non-Whitened Vs. Whitened Light Curve

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

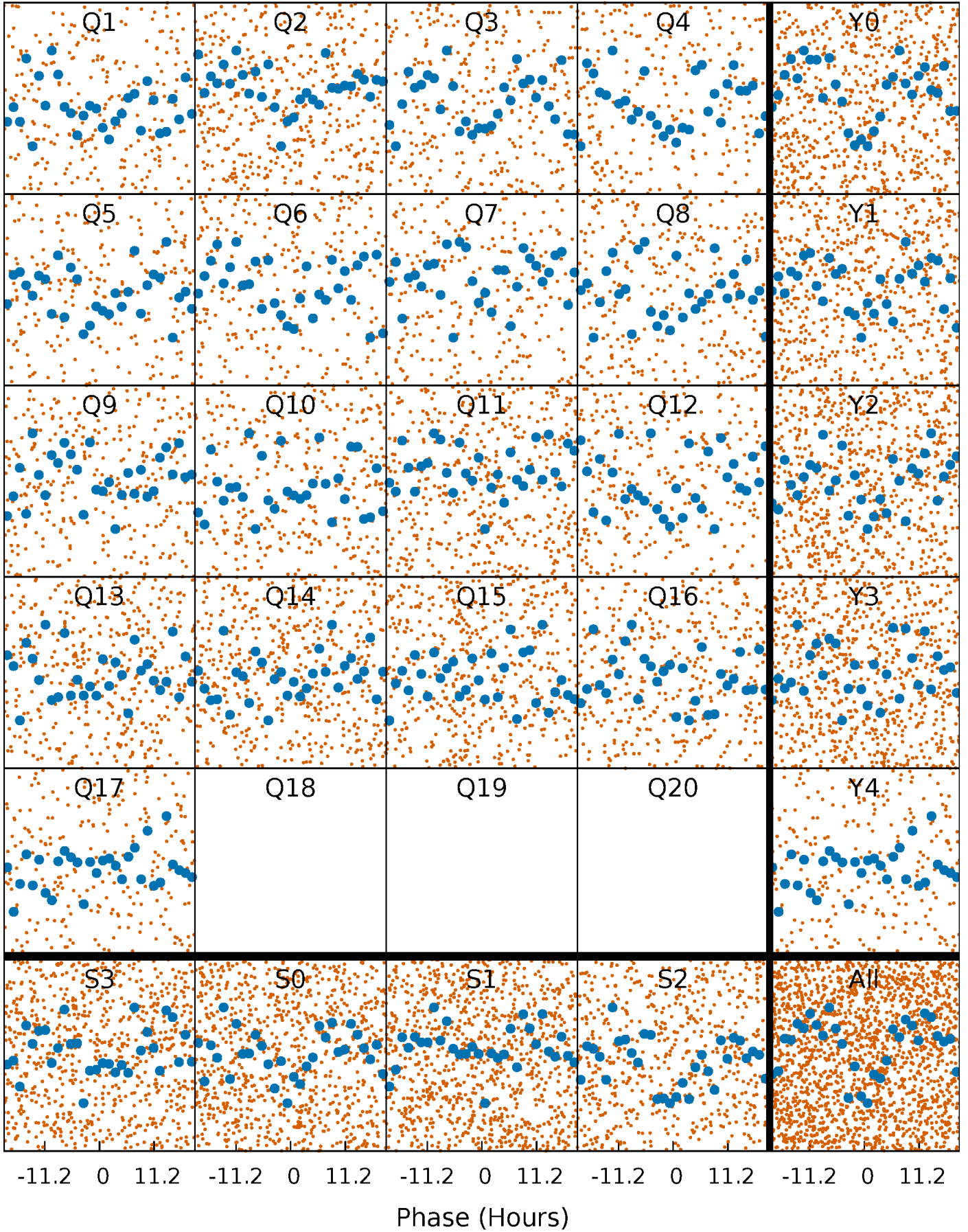


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



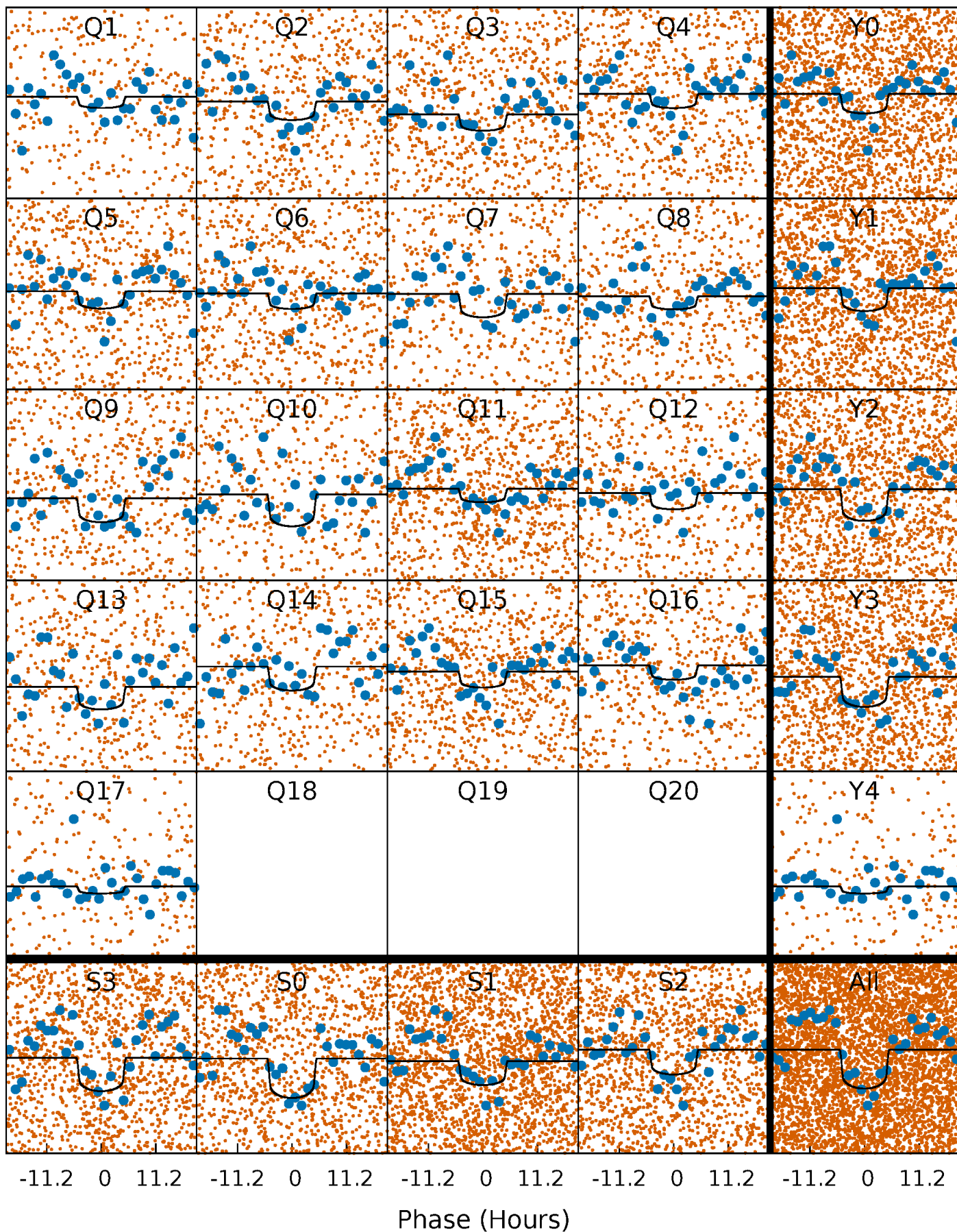
PDC Quarter-Phased Transit Curves

TCE 006964804-02 P= 3.266373 Days $T_0=131.756974$ (BKJD)



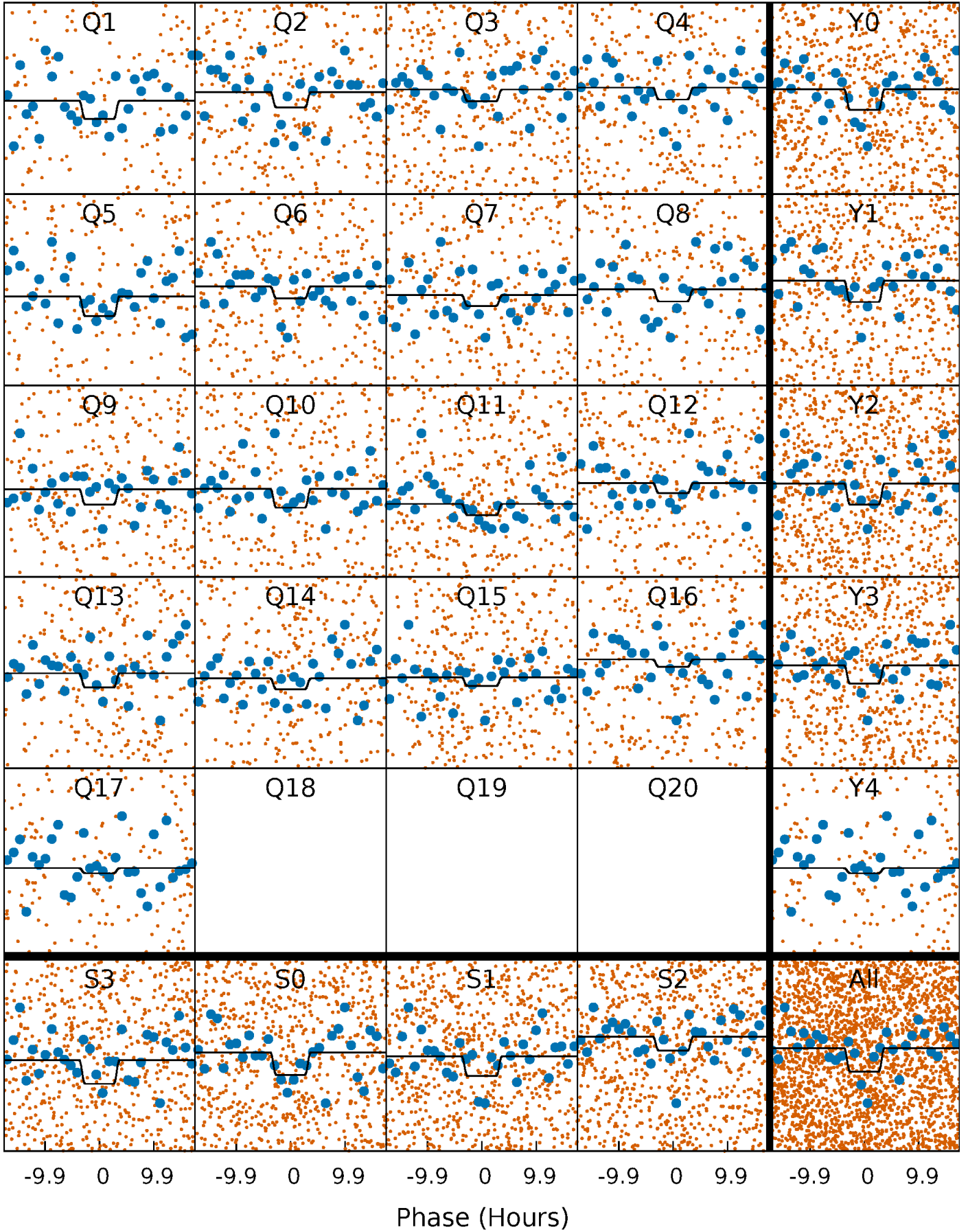
DV Quarter-Phased Transit Curves

TCE 006964804-02 P= 3.266373 Days $T_0=131.756974$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

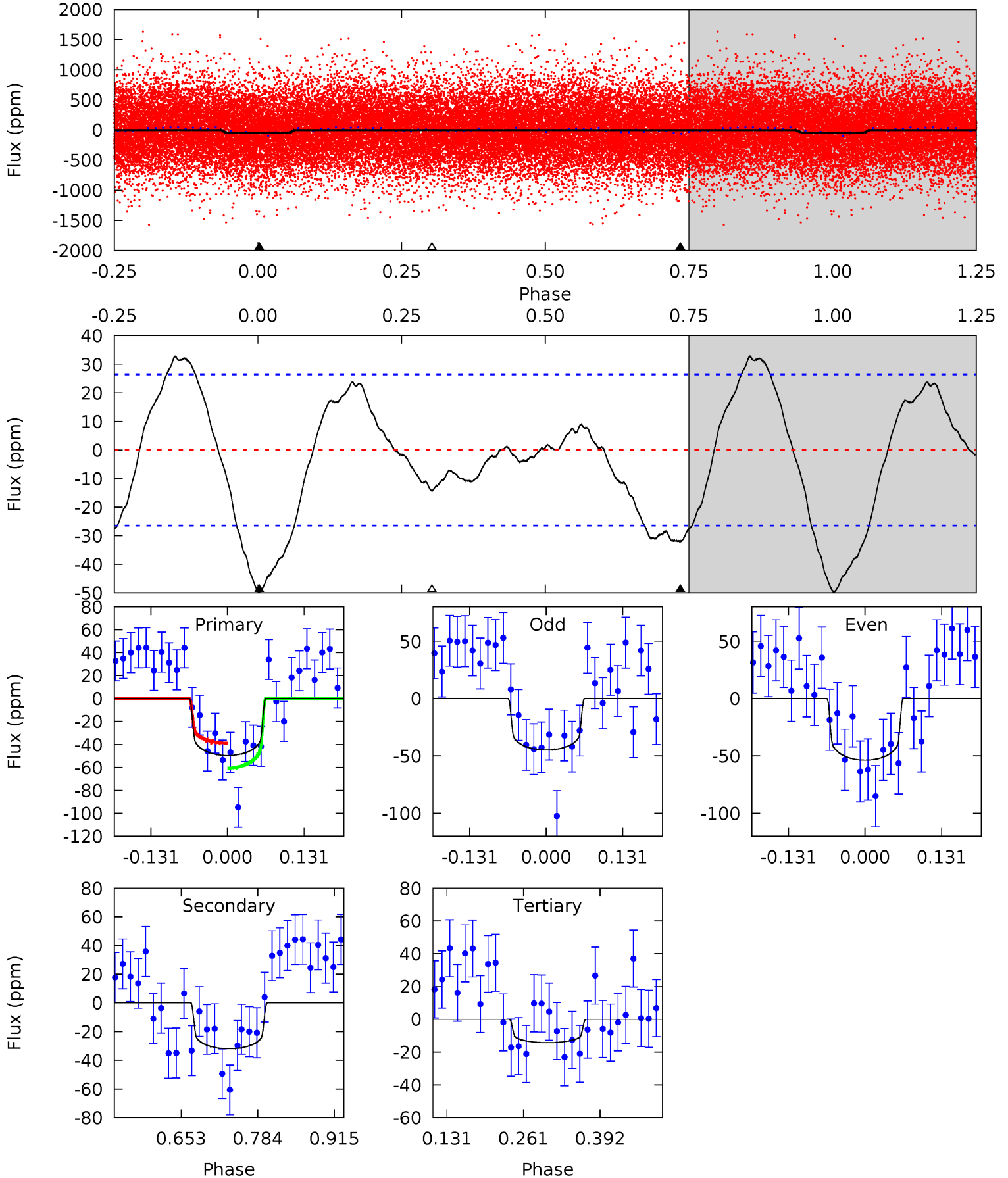
TCE 006964804-02 P= 3.266594 Days $T_0=131.745730$ (BKJD)



DV Model-Shift Uniqueness Test

006964804-02, P = 3.266373 Days, E = 128.490601 Days

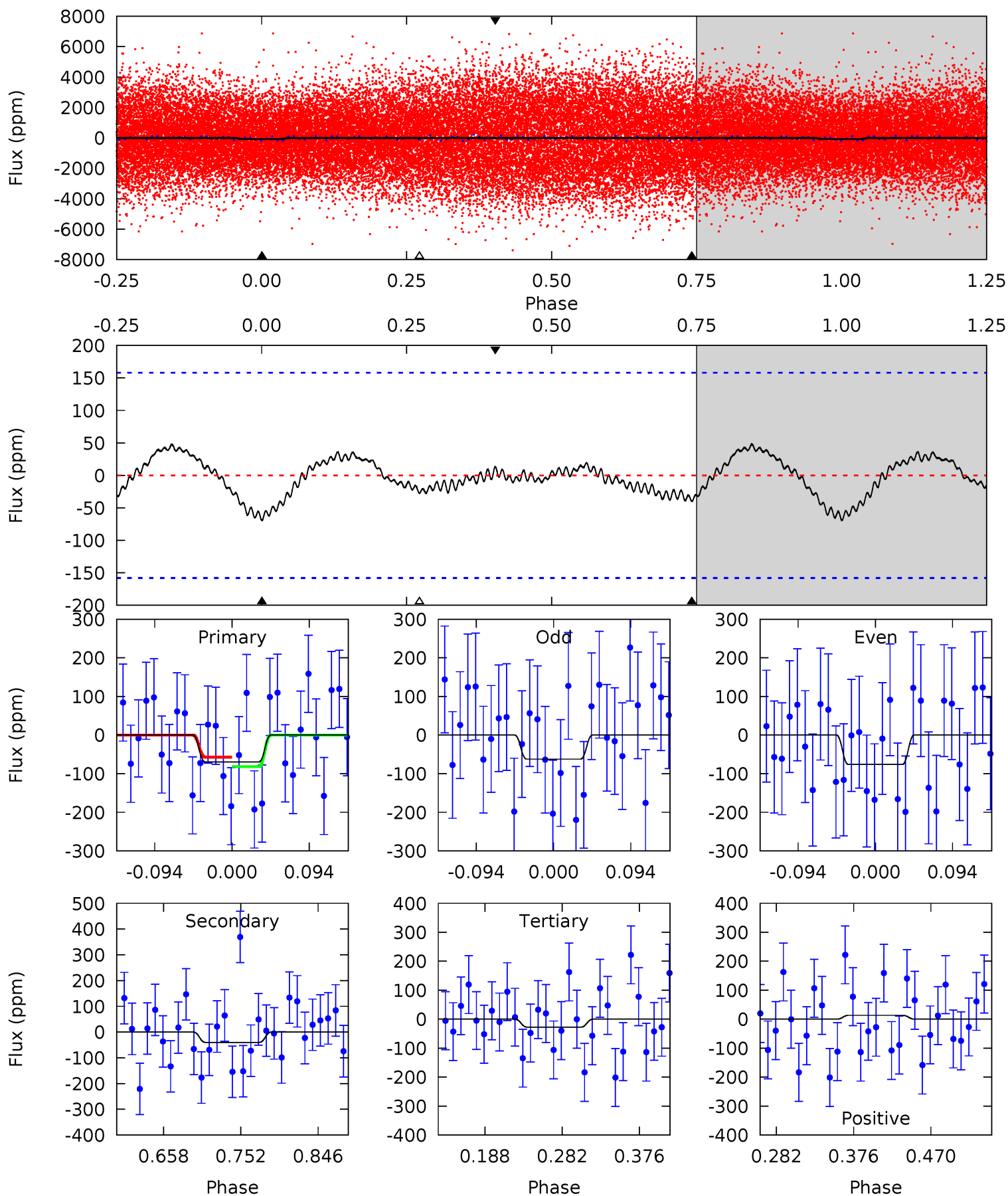
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.46	5.45	2.42	0	4.51	1.51	1.74	6.03	8.46	3.02	5.45	0.76	1.08	0.40	1.88



Alt Model-Shift Uniqueness Test

006964804-02, P = 3.266594 Days, E = 128.479136 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.01	1.16	0.79	0.38	4.58	1.67	0.52	1.22	1.63	0.36	0.78	0.20	1.11	0.41	0.36



Stellar Parameters For KIC 006964804

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	ρ_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	8048^{+224}_{-337}	$3.725^{+0.442}_{-0.104}$	$-0.100^{+0.200}_{-0.350}$	$3.251^{+0.758}_{-1.517}$	$2.046^{+0.333}_{-0.500}$	$0.084^{+0.350}_{-0.028}$
	+3%/-4%	+12%/-3%	+200%/-350%	+23%/-47%	+16%/-24%	+417%/-33%
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 006964804-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-32 ± 6	$2.36^{+1.17}_{-0.94}$	3678^{+292}_{-427}	6706^{+2094}_{-1017}	$9.402^{+17.152}_{-5.108}$
Alt.	-40 ± 35	$2.77^{+1.12}_{-1.04}$	3678^{+279}_{-406}	6507^{+2323}_{-2536}	$7.629^{+15.628}_{-6.532}$

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

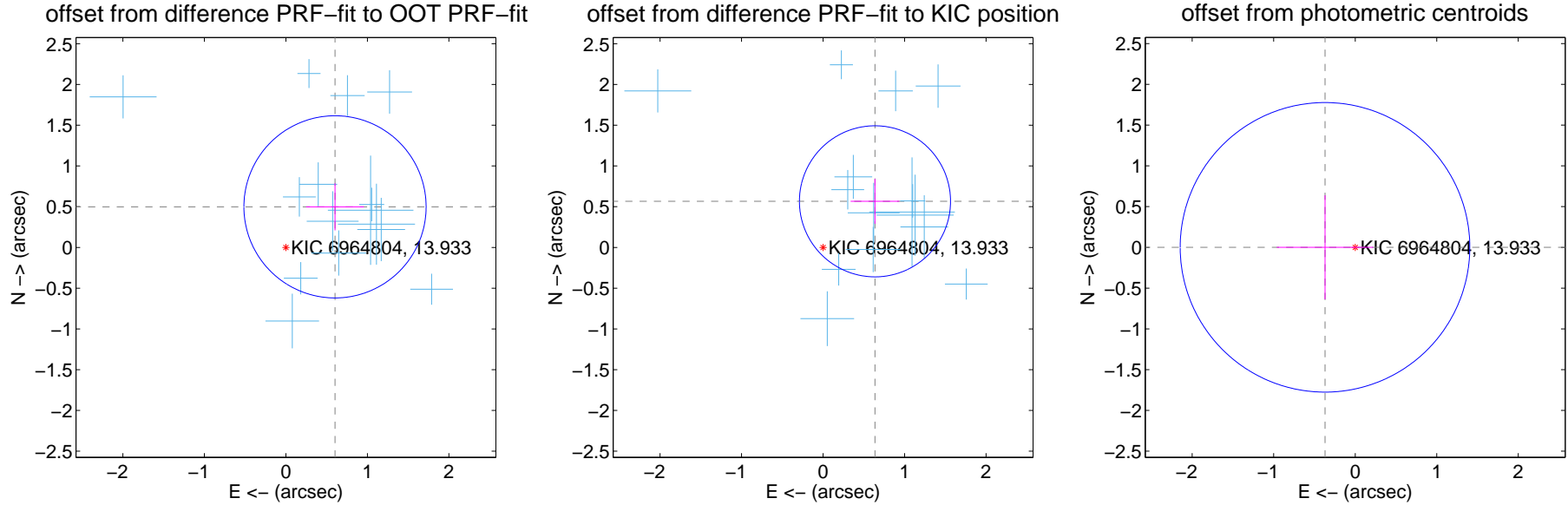
DV Centroid Data

Supplemental centroid analysis for 006964804-02. Kepler magnitude: 13.93. Transit SNR 7.82

There are 16 quarters with good PRF difference image offsets

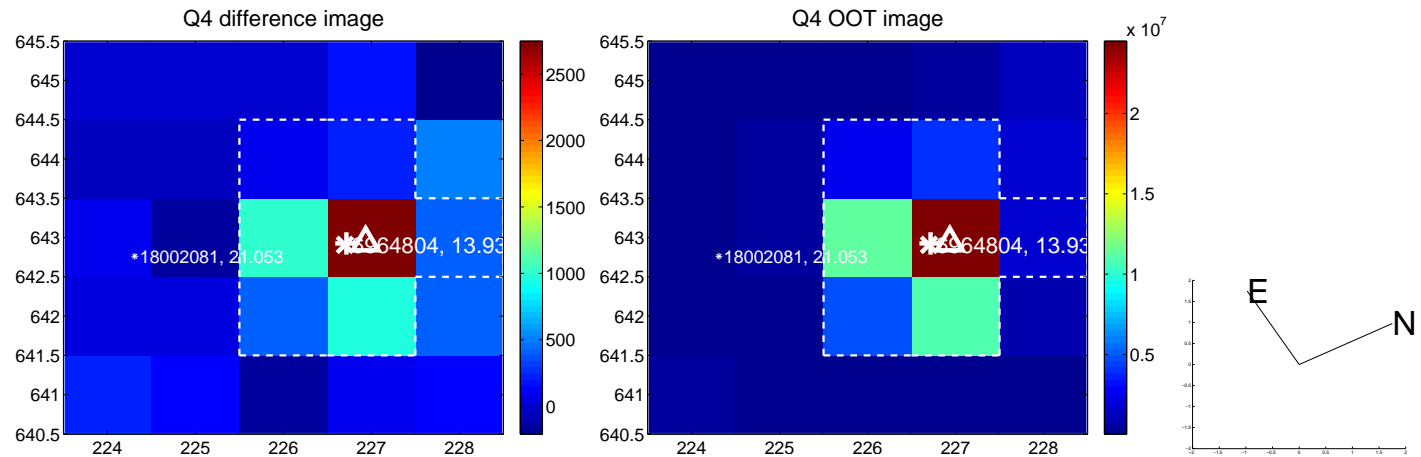
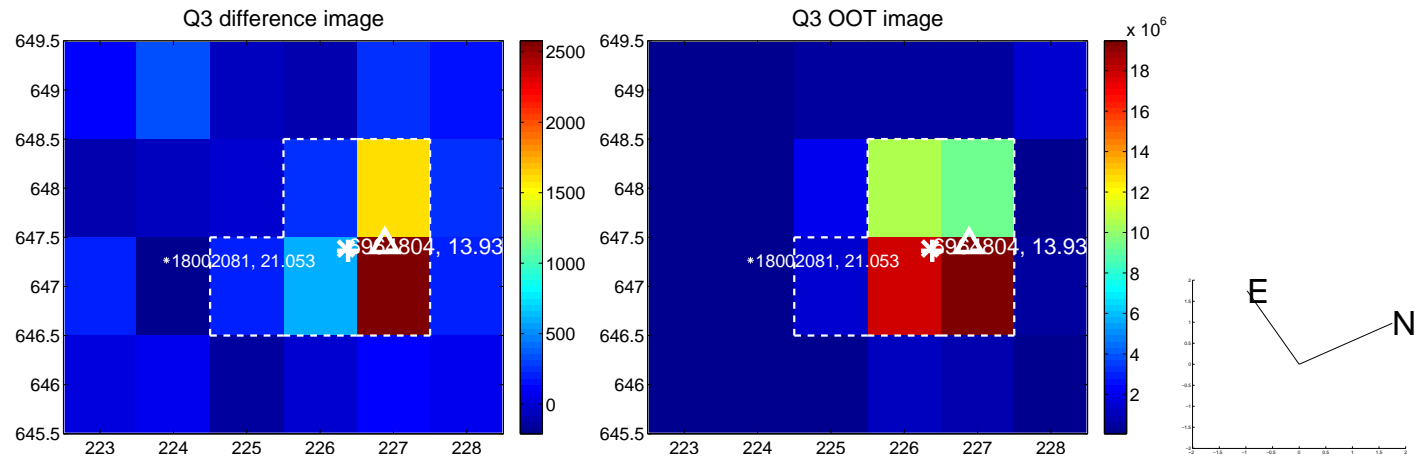
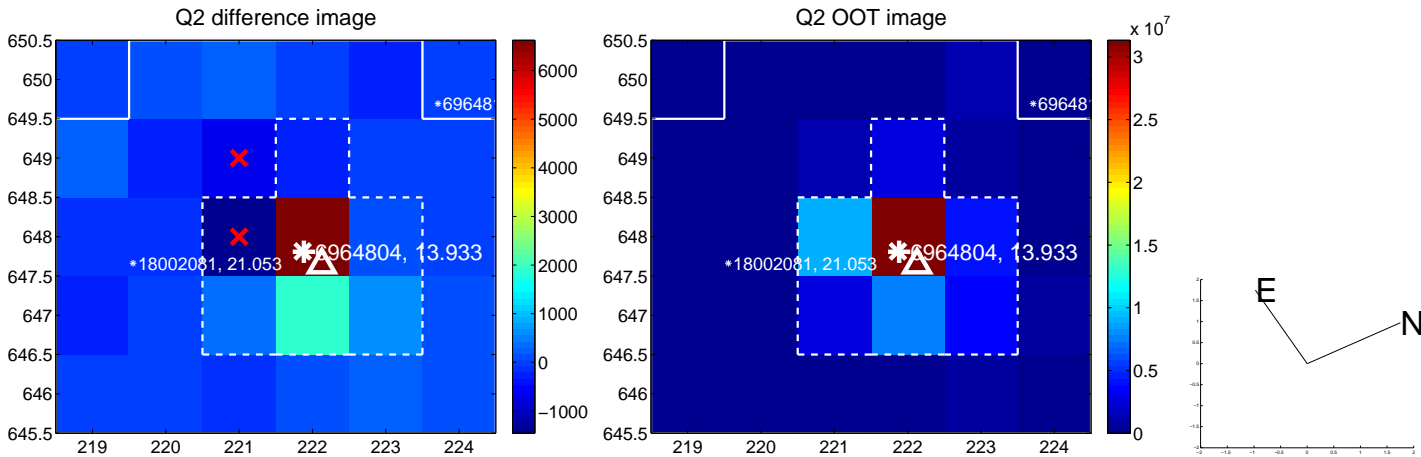
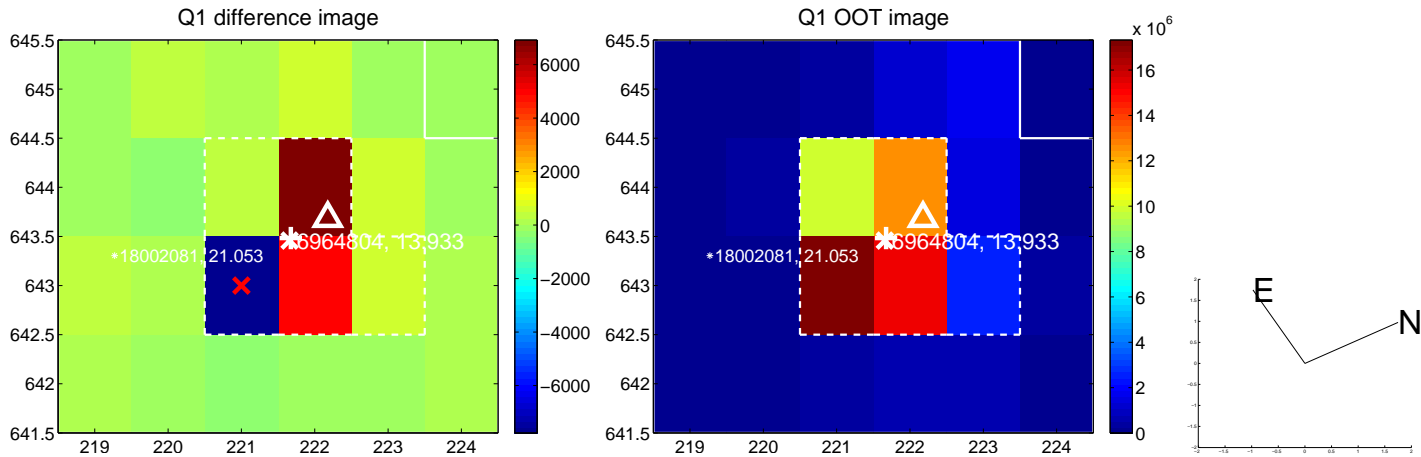
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.782 ± 0.373	2.10	-0.603 ± 0.354	0.498 ± 0.289
PRF-fit source offset from KIC position	0.852 ± 0.309	2.76	-0.637 ± 0.298	0.566 ± 0.275
photometric centroid source offset	0.37 ± 0.59	0.63	0.37 ± 0.59	0.00 ± 0.64

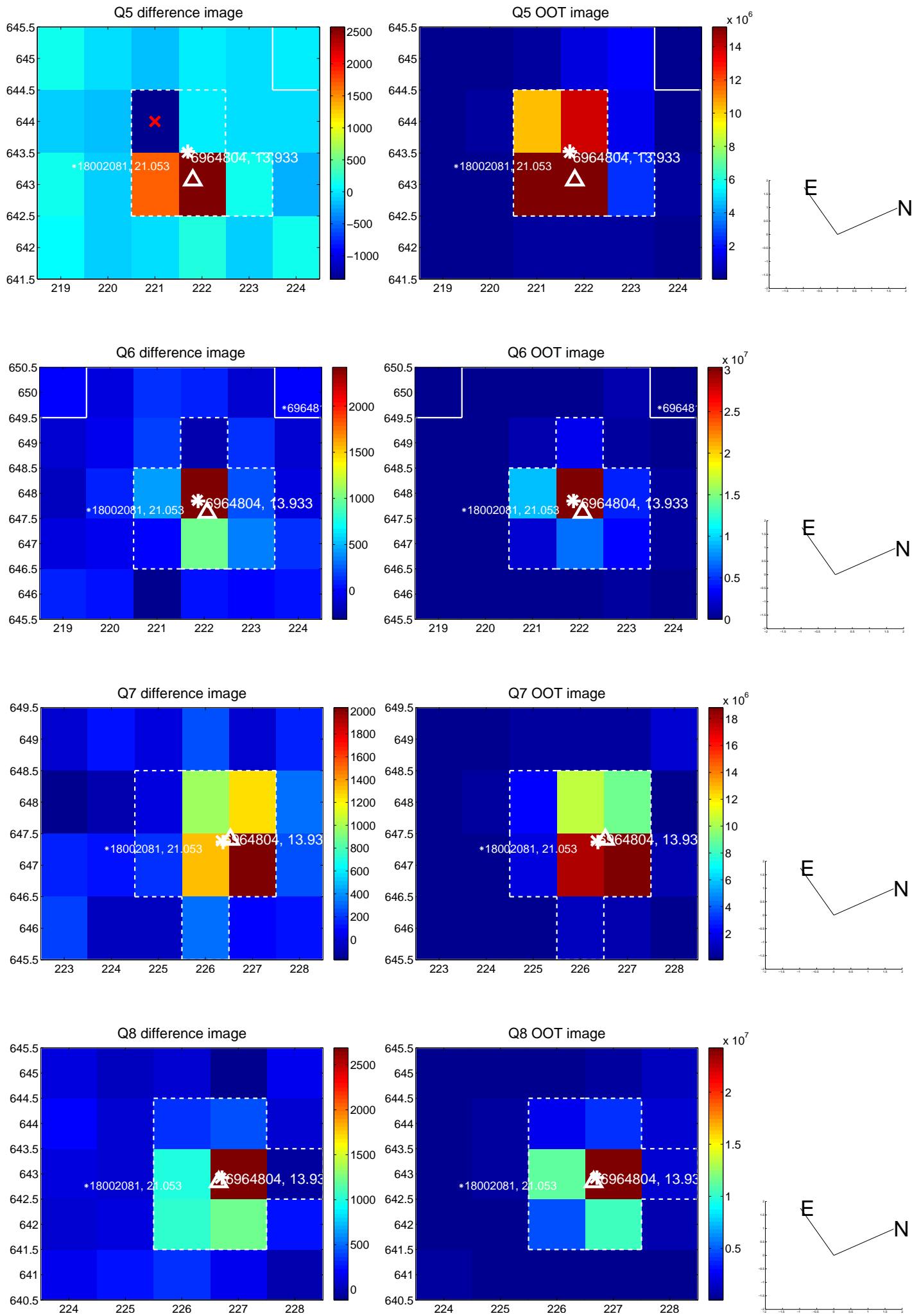


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

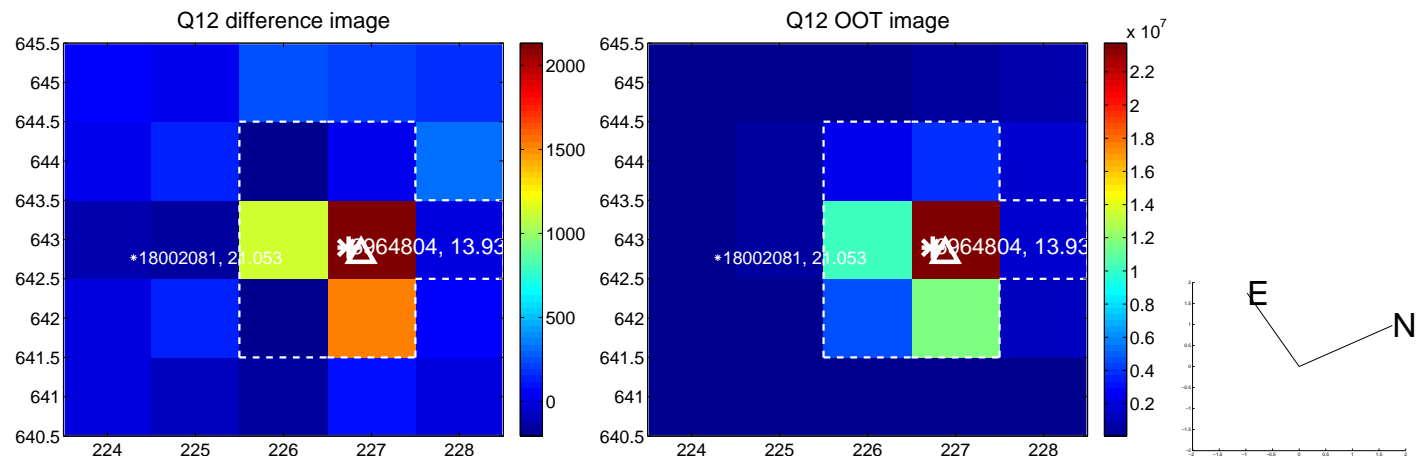
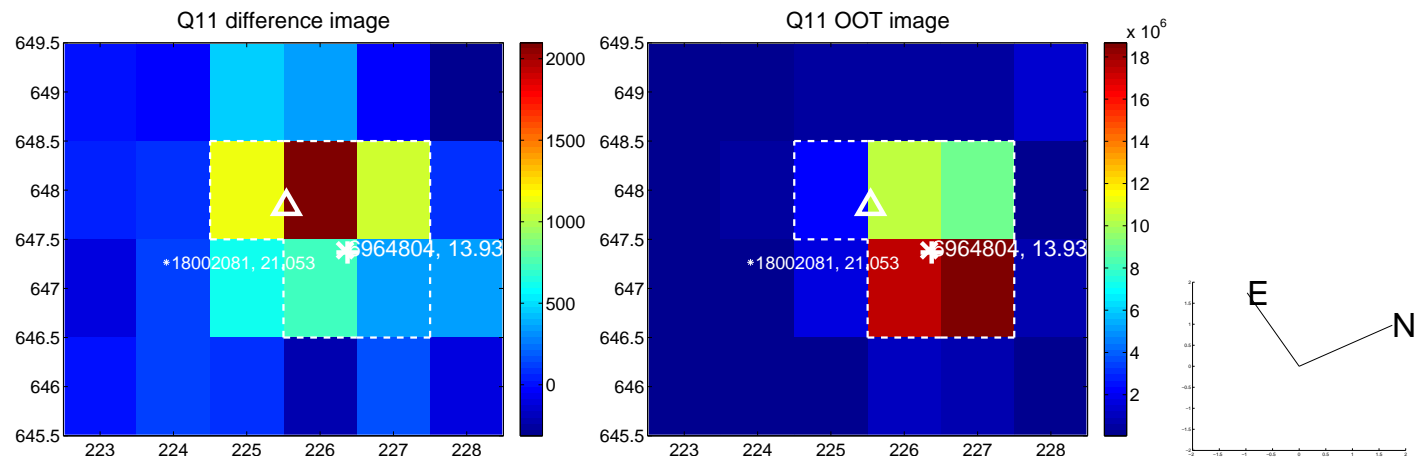
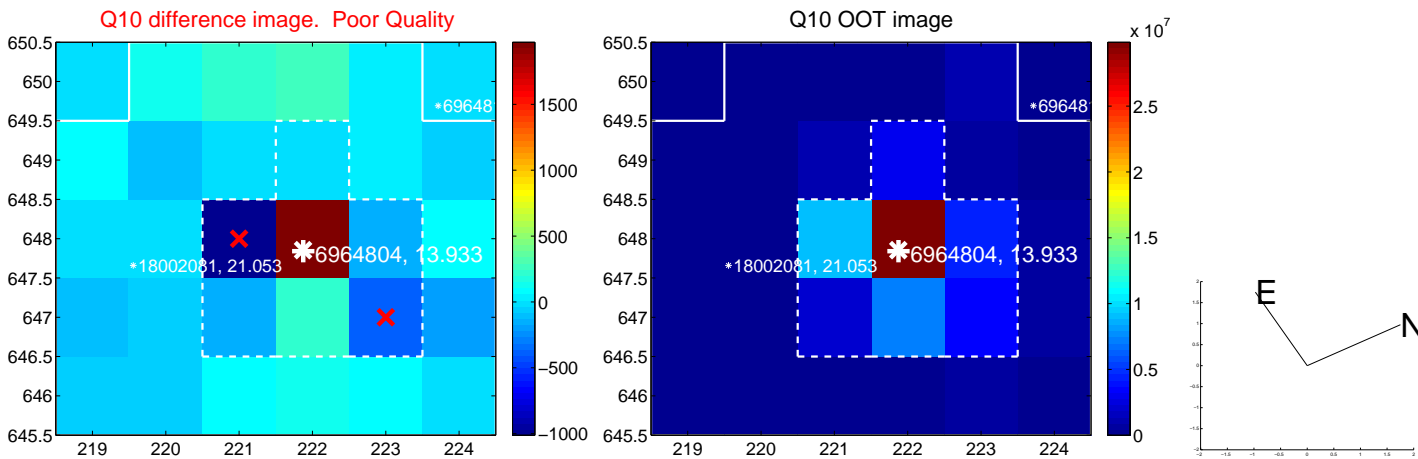
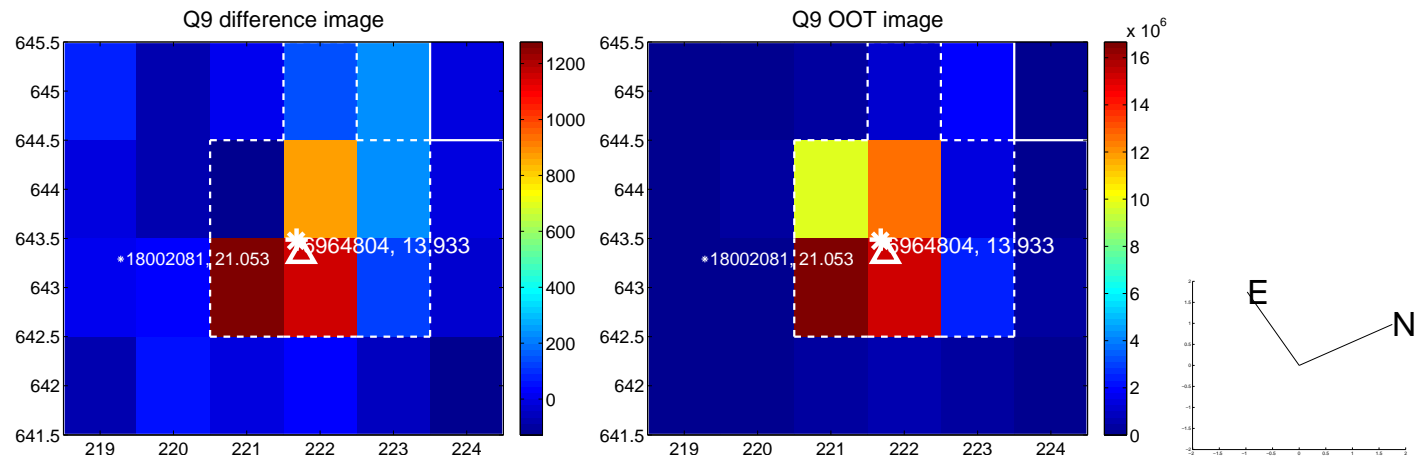
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



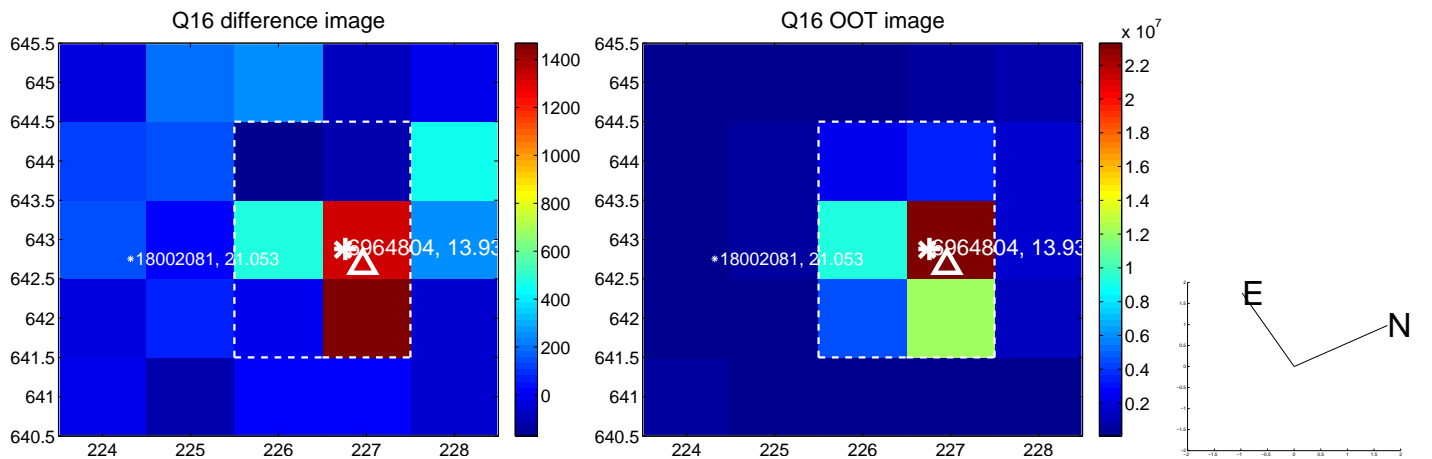
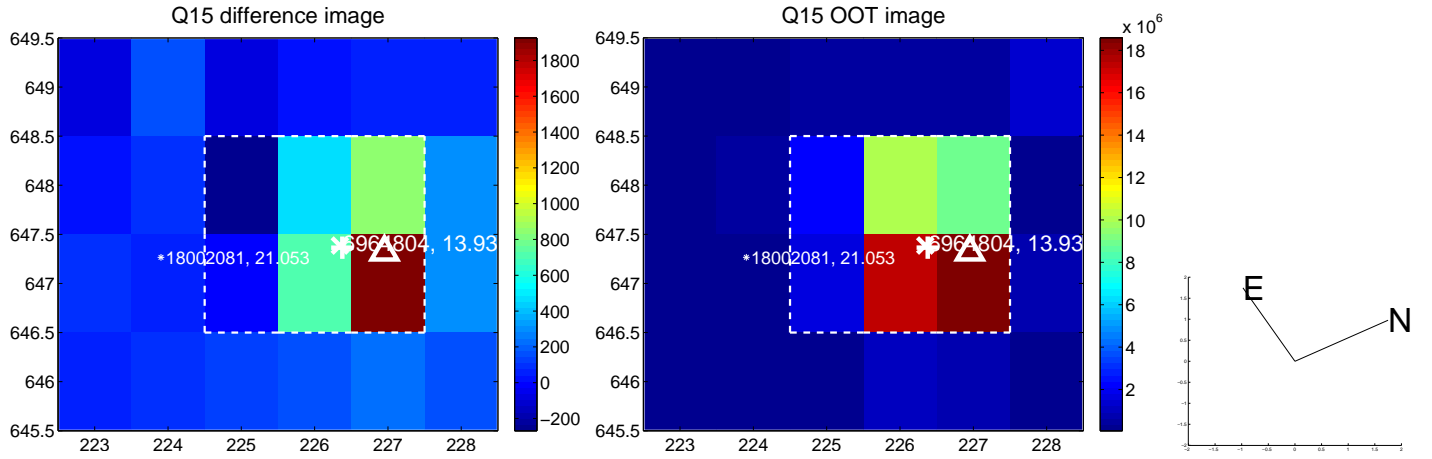
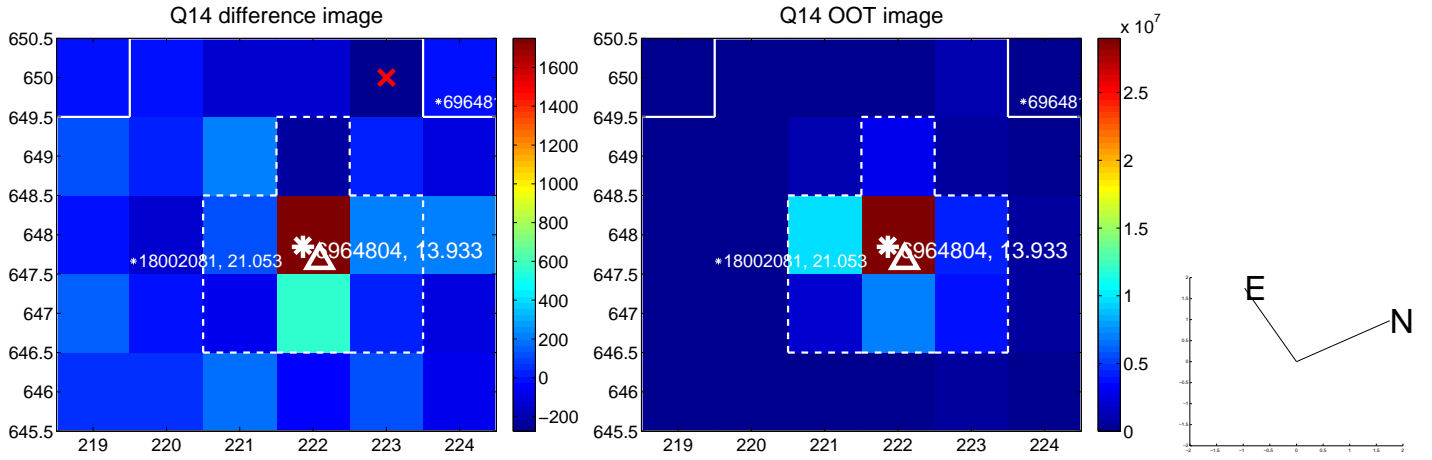
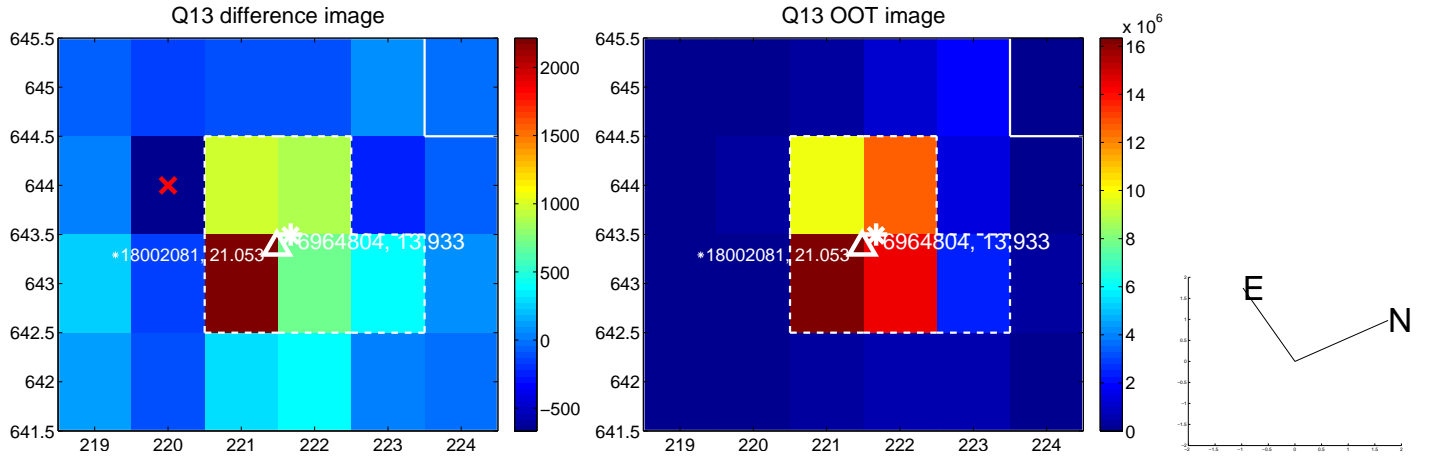
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



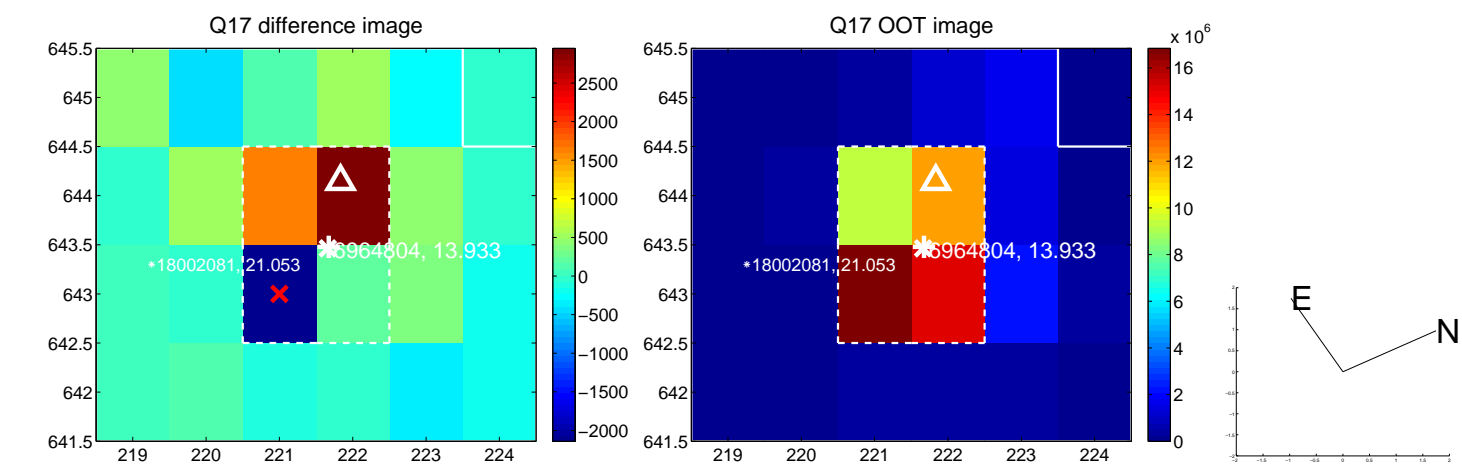
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



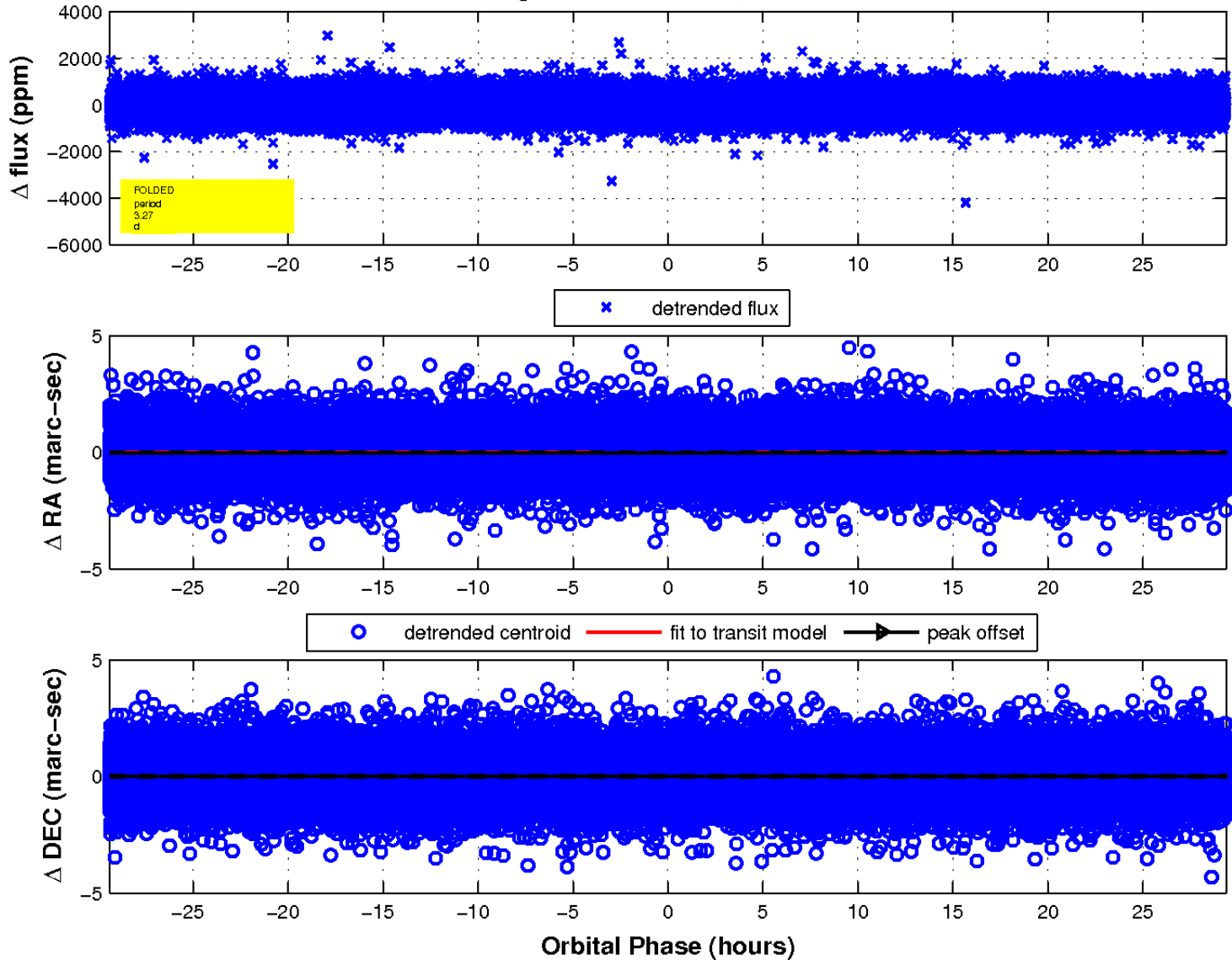
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 2 of 2



UKIRT Image

Declination

