

KIC 006145614

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})
006145614-01	OBS	No	1.444880	132.870340	29.2	4.293	10.9	8.8	3.73	6033	2.37	19932.85
006145614-02	OBS	No	1.444845	131.658932	31.5	17.338	13.2	8.7	3.73	6033	2.09	19933.48

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006145614-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV
006145614-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—LPP_DV—LPP_ALT—SAME_NTL_PERIOD—CENT_FEW_DIFFS

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

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

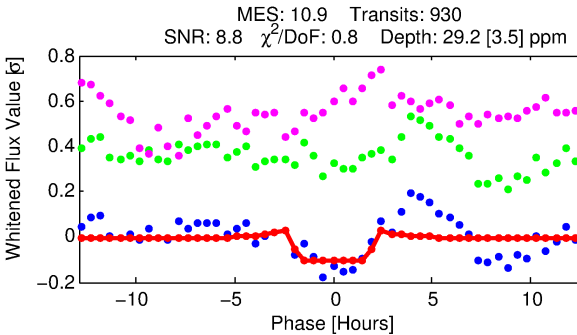
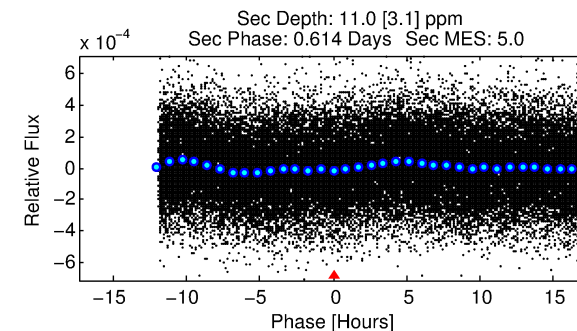
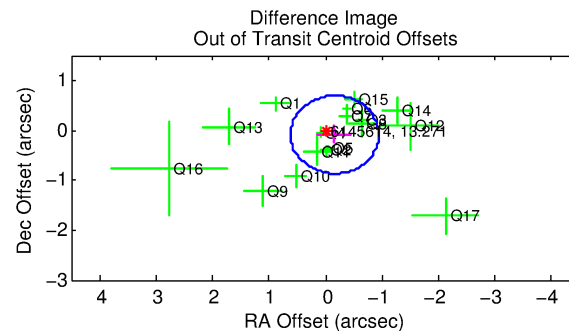
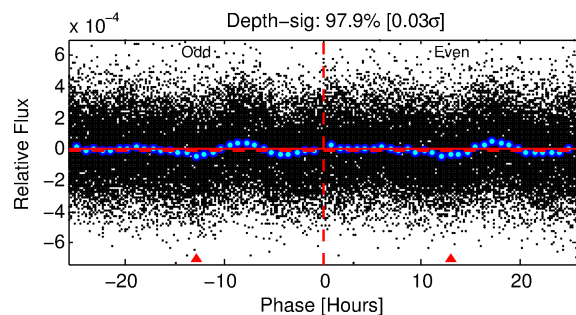
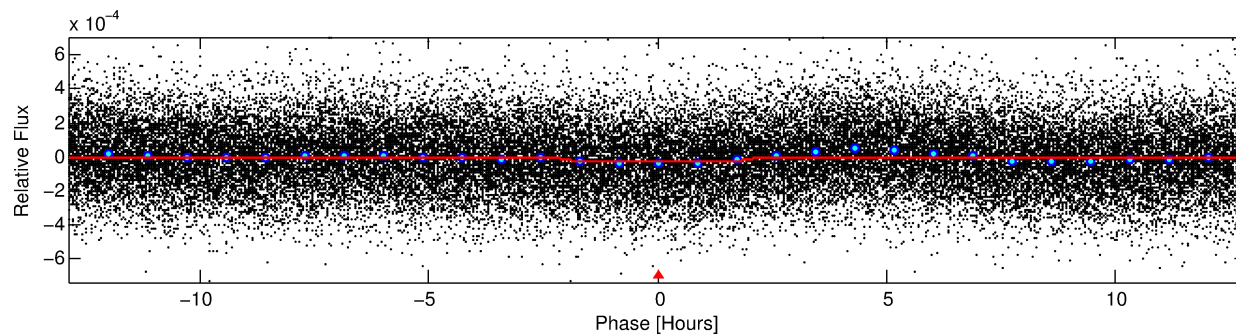
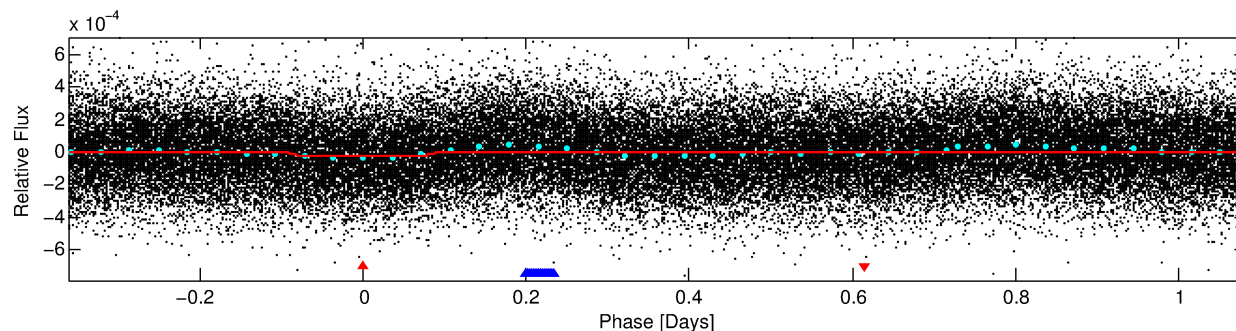
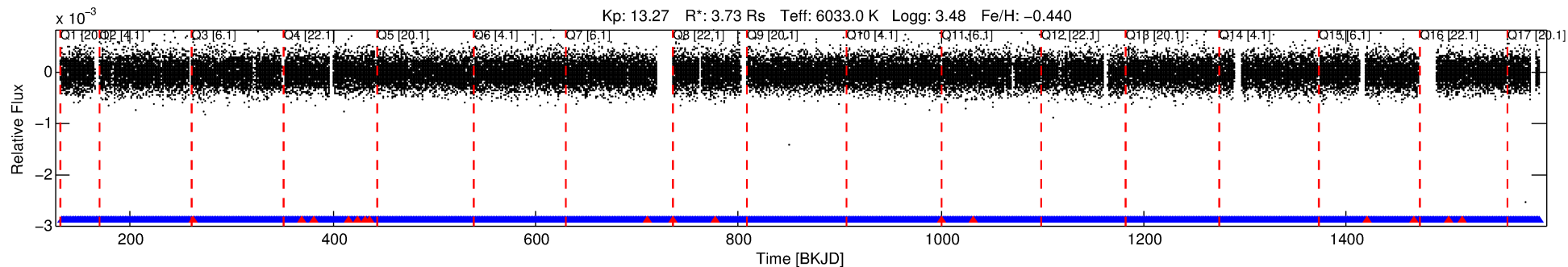
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006145614-01

No Significant Match Found

DV One-Page Summary

KIC: 6145614 Candidate: 1 of 2 Period: 1.445 d



DV Fit Results:

Period = 1.44488 [0.00002] d
Epoch = 132.8703 [0.0042] BKJD
Rp/R* = 0.0058 [0.0022]
a/R* = 1.47 [1.67]
b = 0.90 [0.43]
Seff = 19932.85 [13173.85]
Teq = 3030 [501] K
Rp = 2.37 [1.38] Re
a = 0.0288 [0.0118] AU
Ag = 0.89 [0.93] [-0.12 σ]
Teff = 4552 [937] K [1.43 σ]

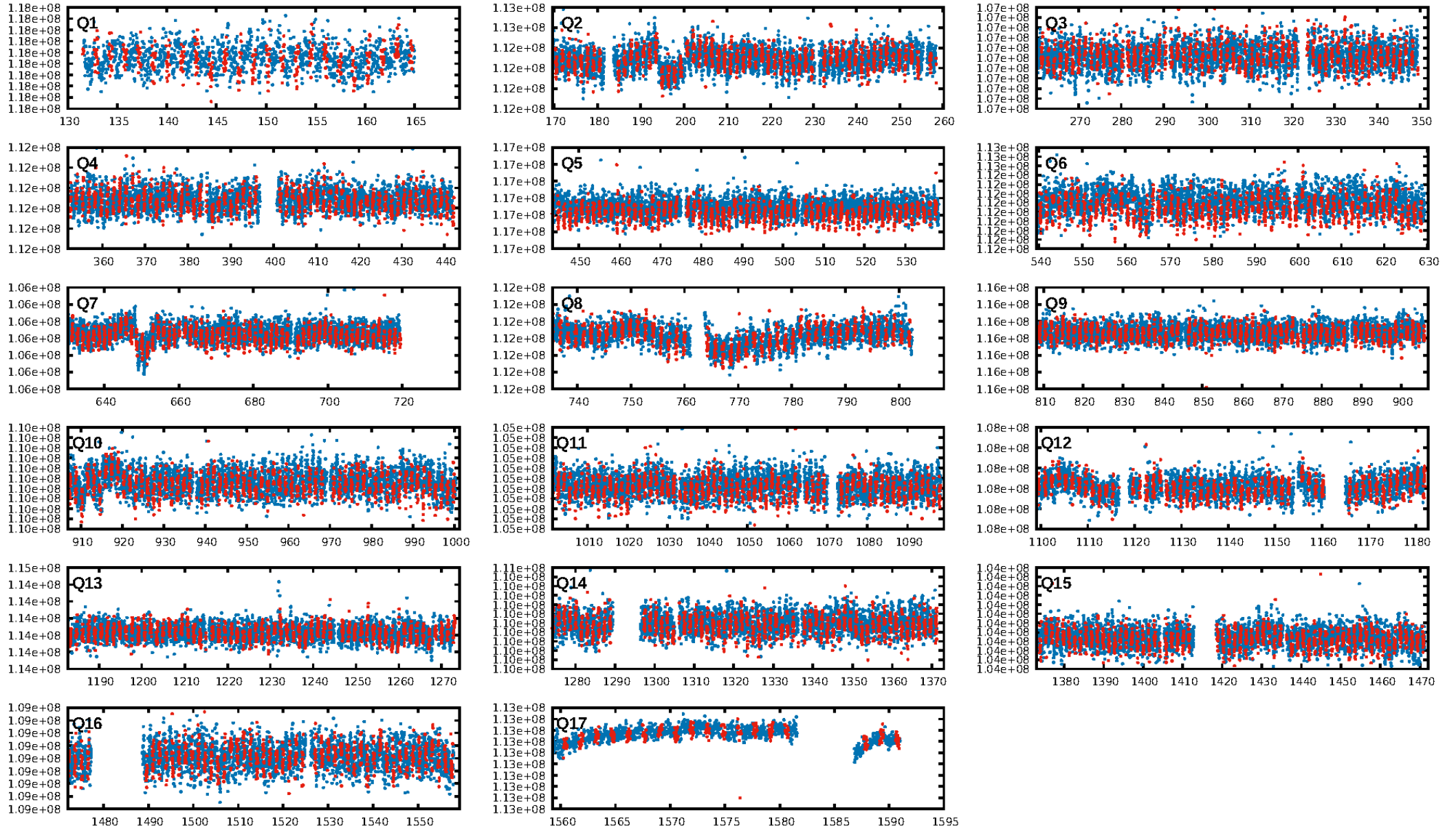
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.98 [872/888]
GhostDiagnostic-chr: 1.285
Centroid-sig: 0.0%
Centroid-so: 3.978 arcsec [4.46 σ]
OotOffset-rm: 0.182 arcsec [0.70 σ]
KicOffset-rm: 0.181 arcsec [0.98 σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.94 [16/17]
DiffImageOverlap-fno: 0.00 [0/17]

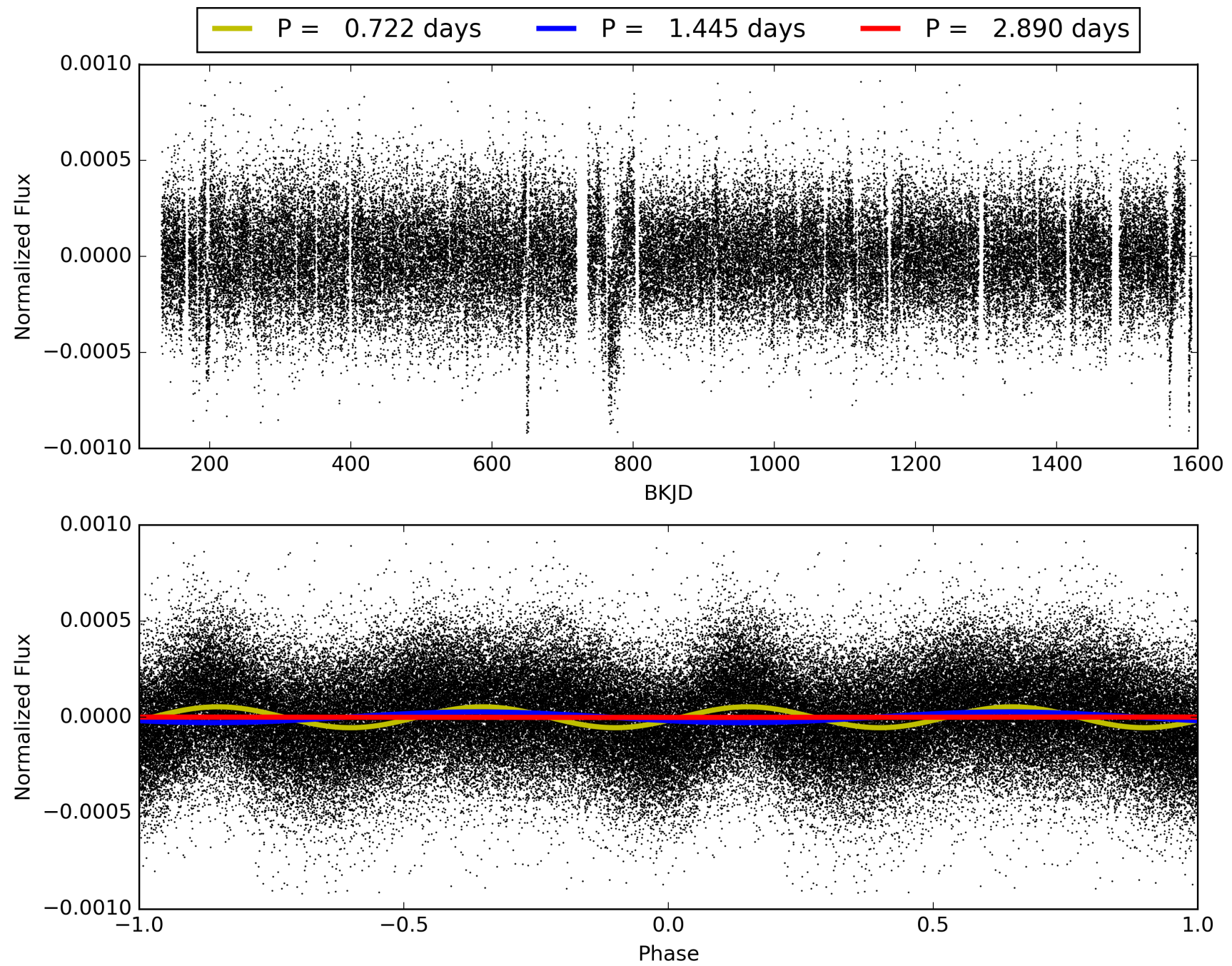
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 20:24:30 Z

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

TCE 006145614-01, PDC Light Curves

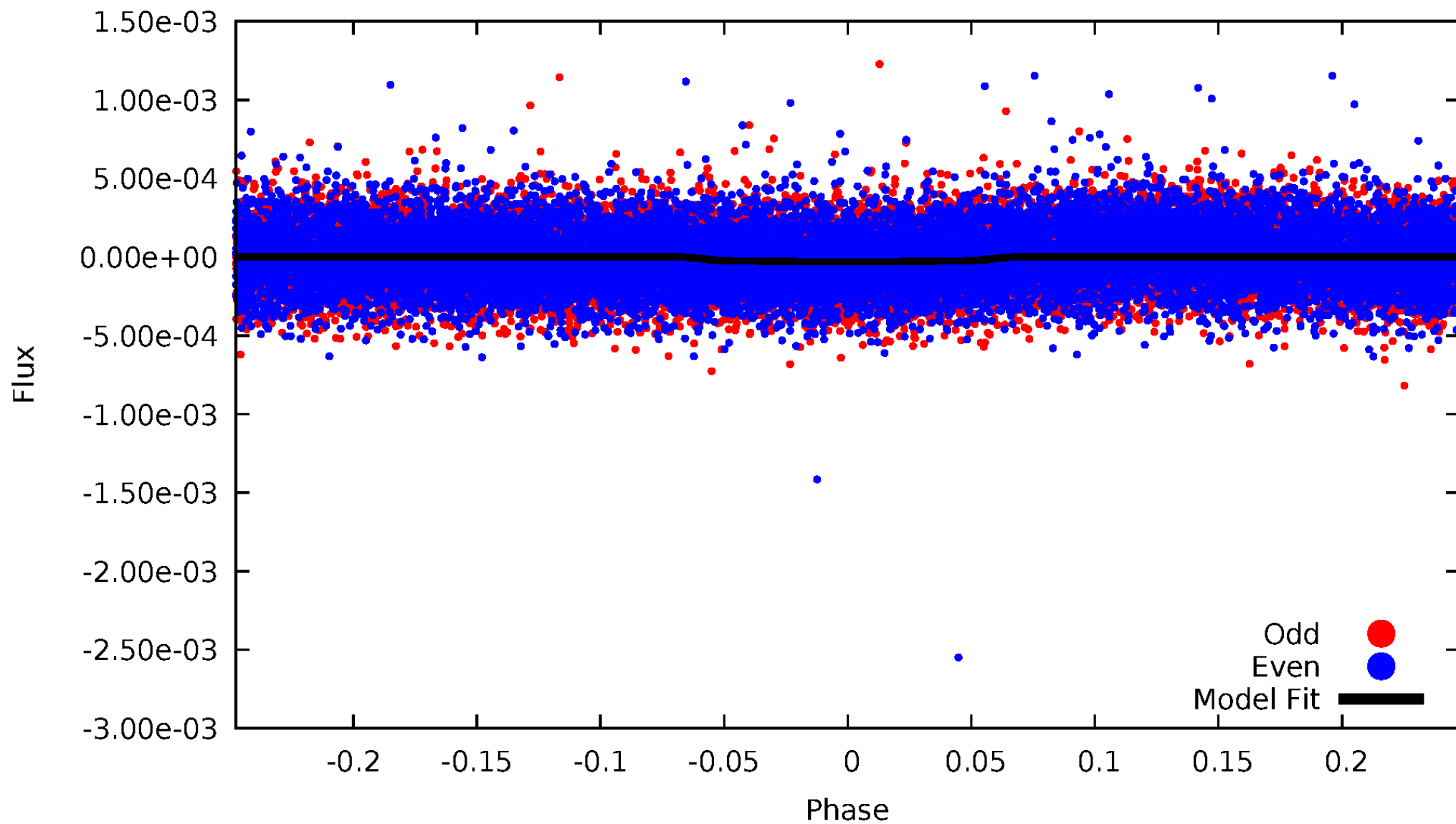


TCE 006145614-01



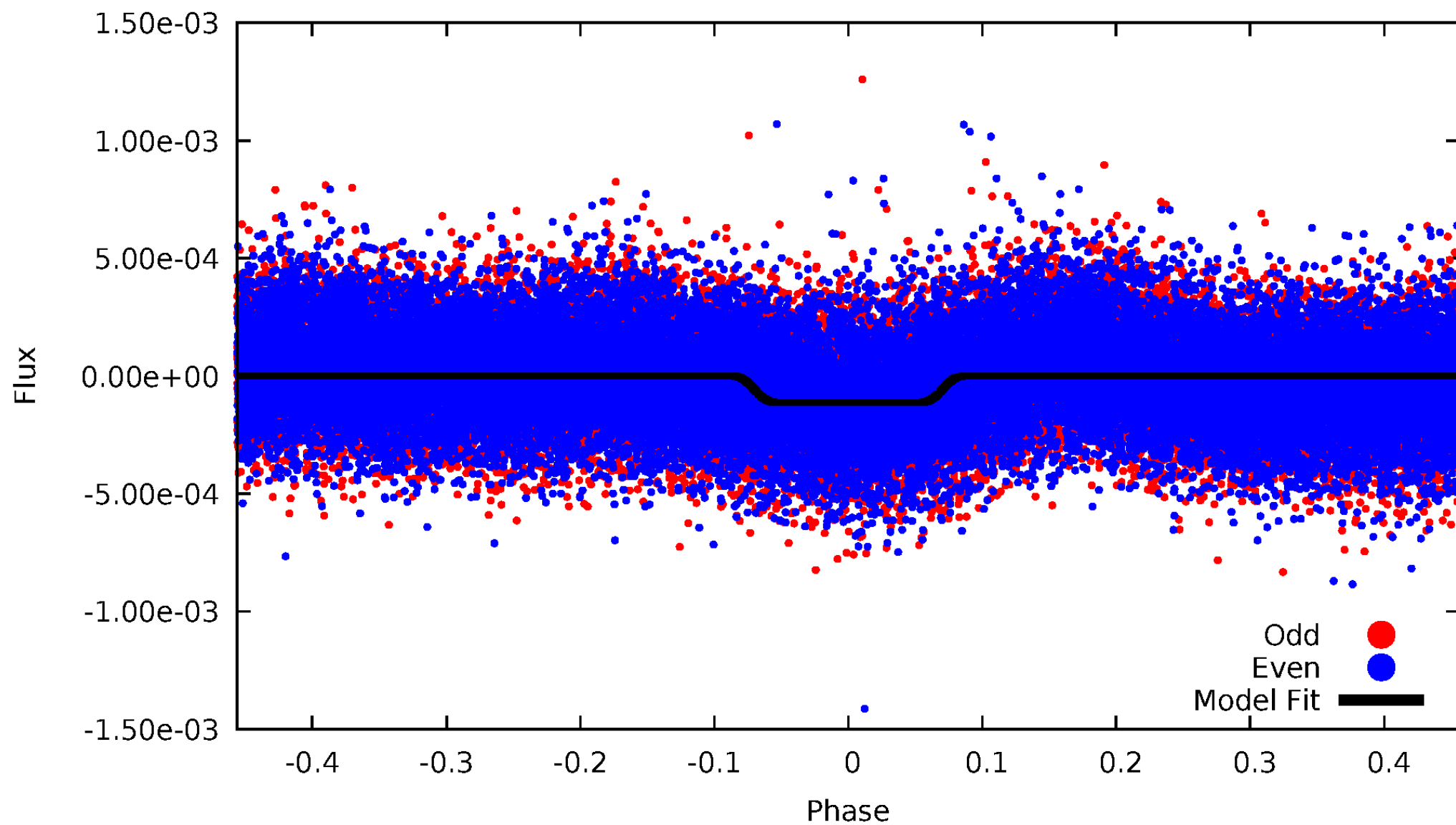
DV Odd/Even

TCE 006145614-01



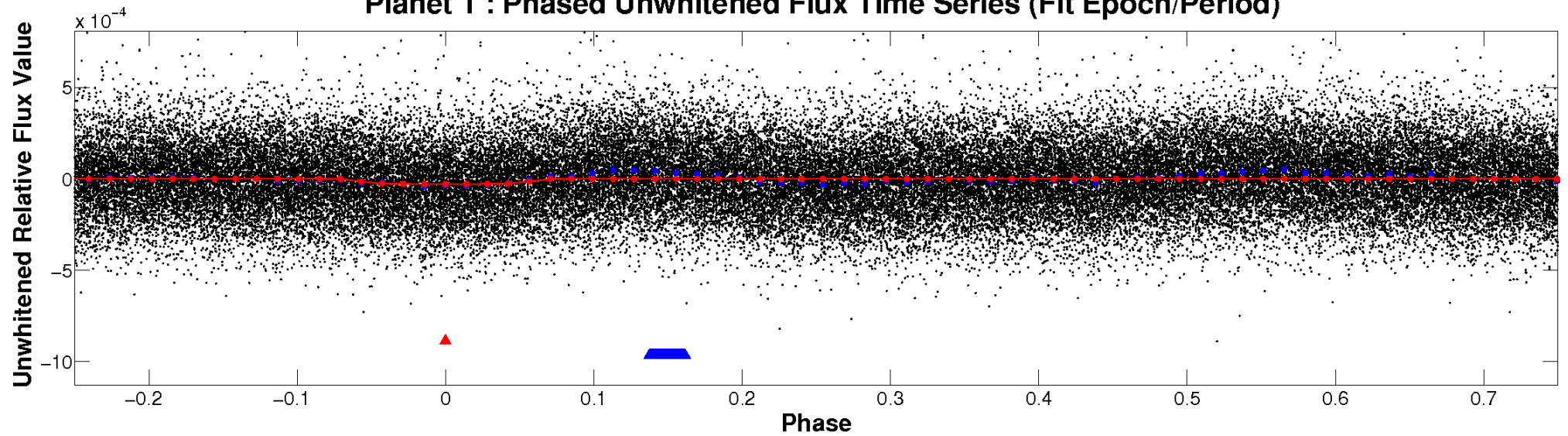
ALT Odd/Even

TCE 006145614-01

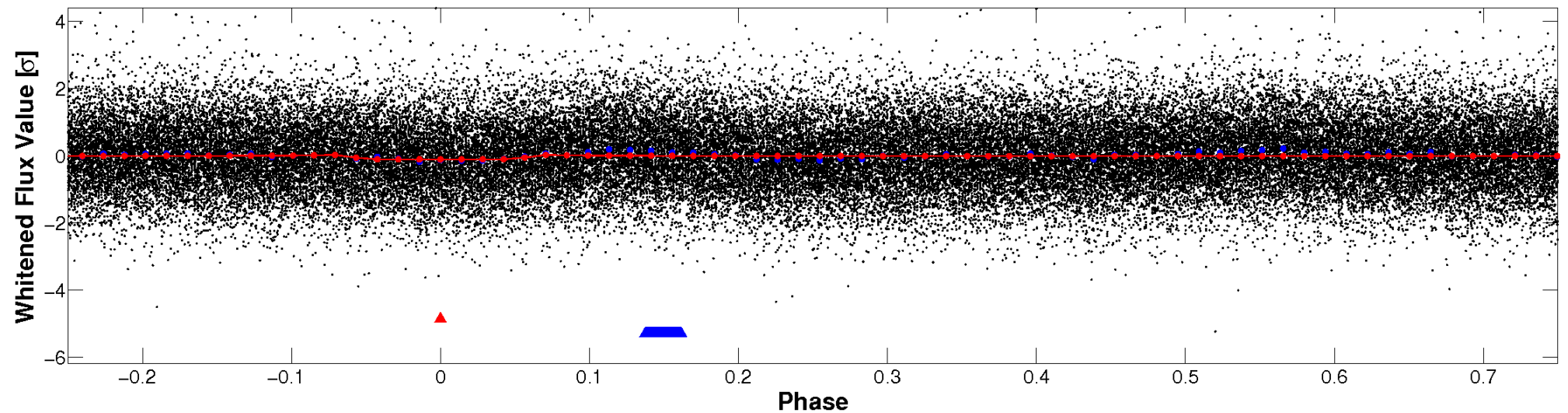


Non-Whitened Vs. Whitened Light Curve

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

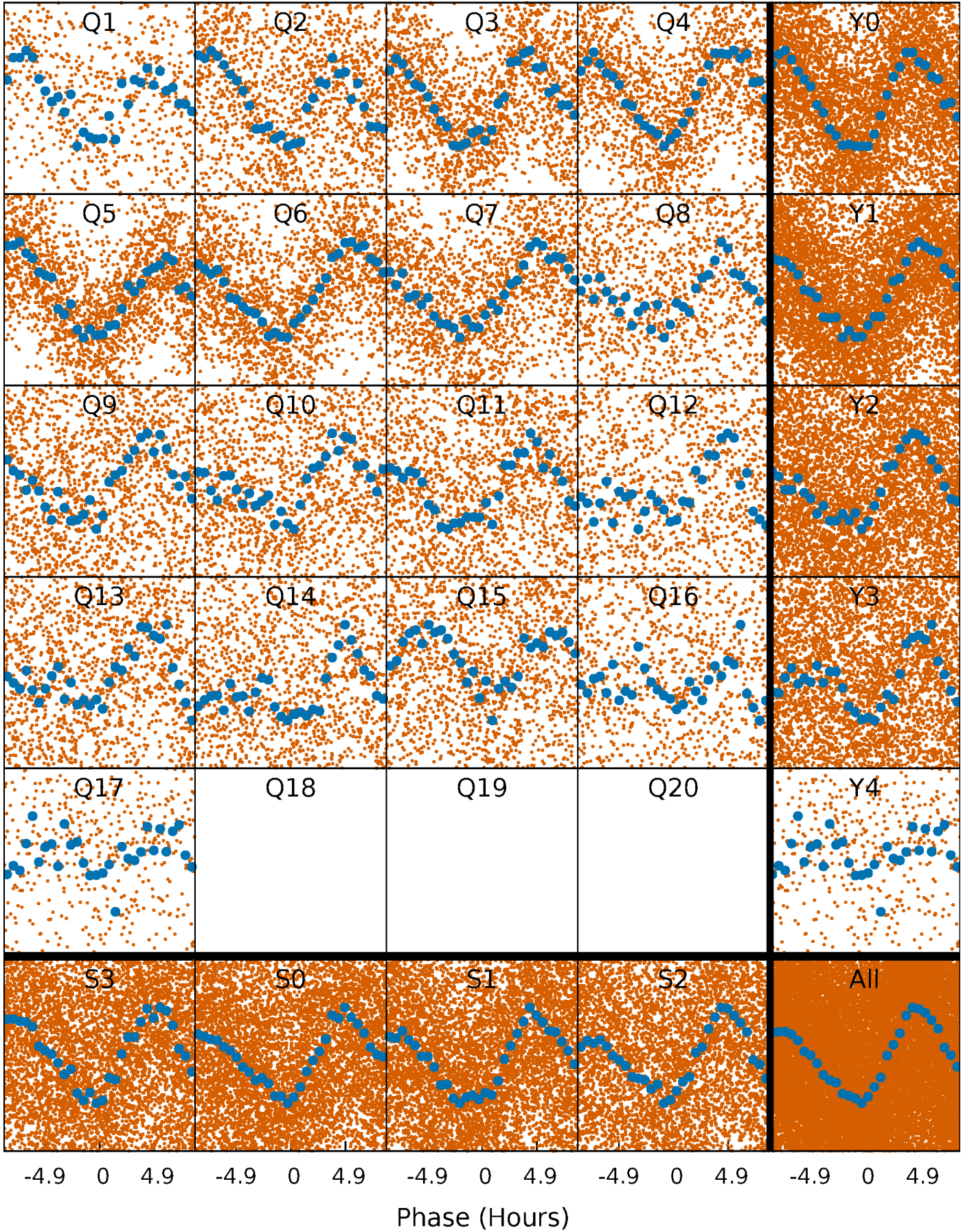


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



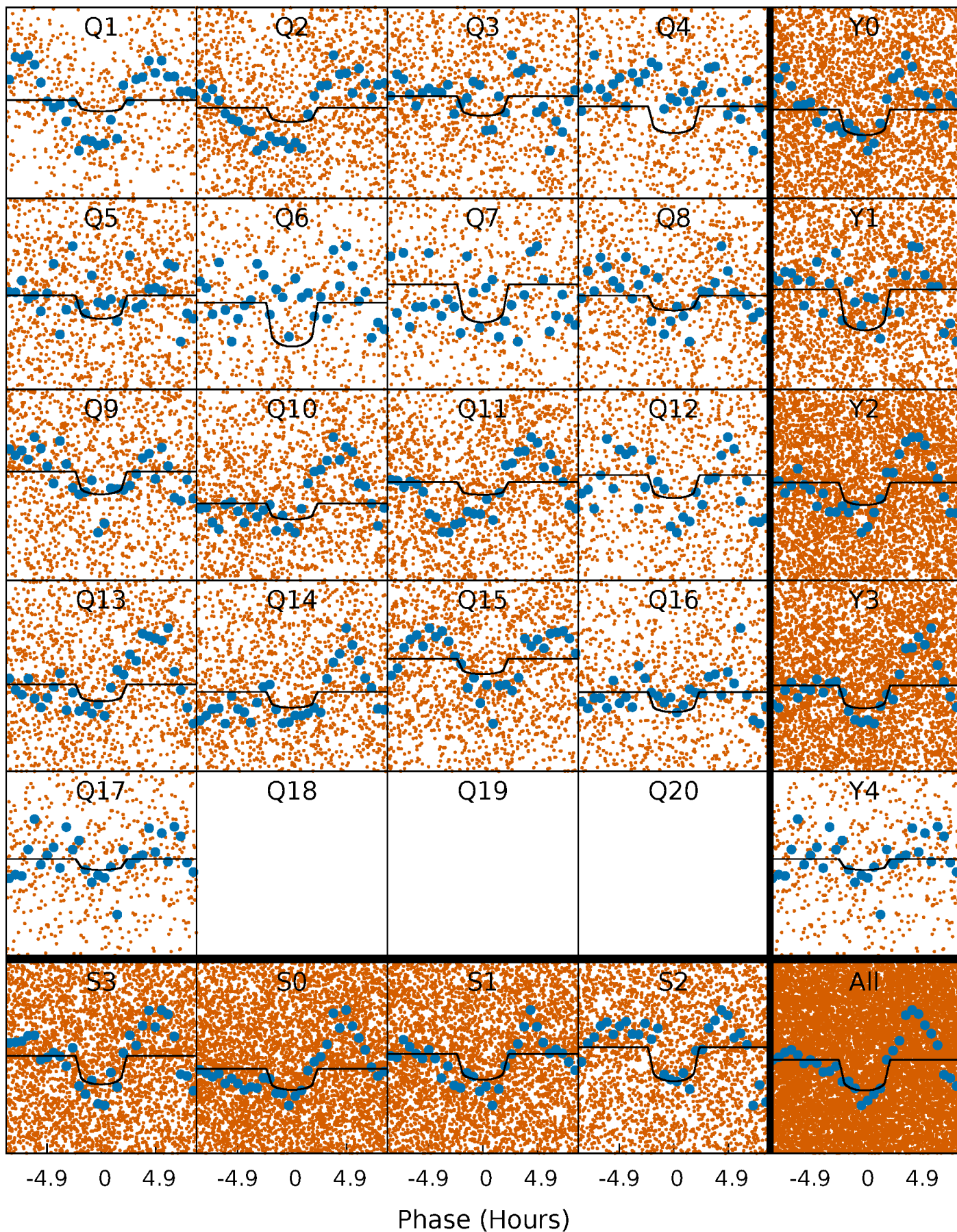
PDC Quarter-Phased Transit Curves

TCE 006145614-01 P= 1.444880 Days $T_0=132.870340$ (BKJD)



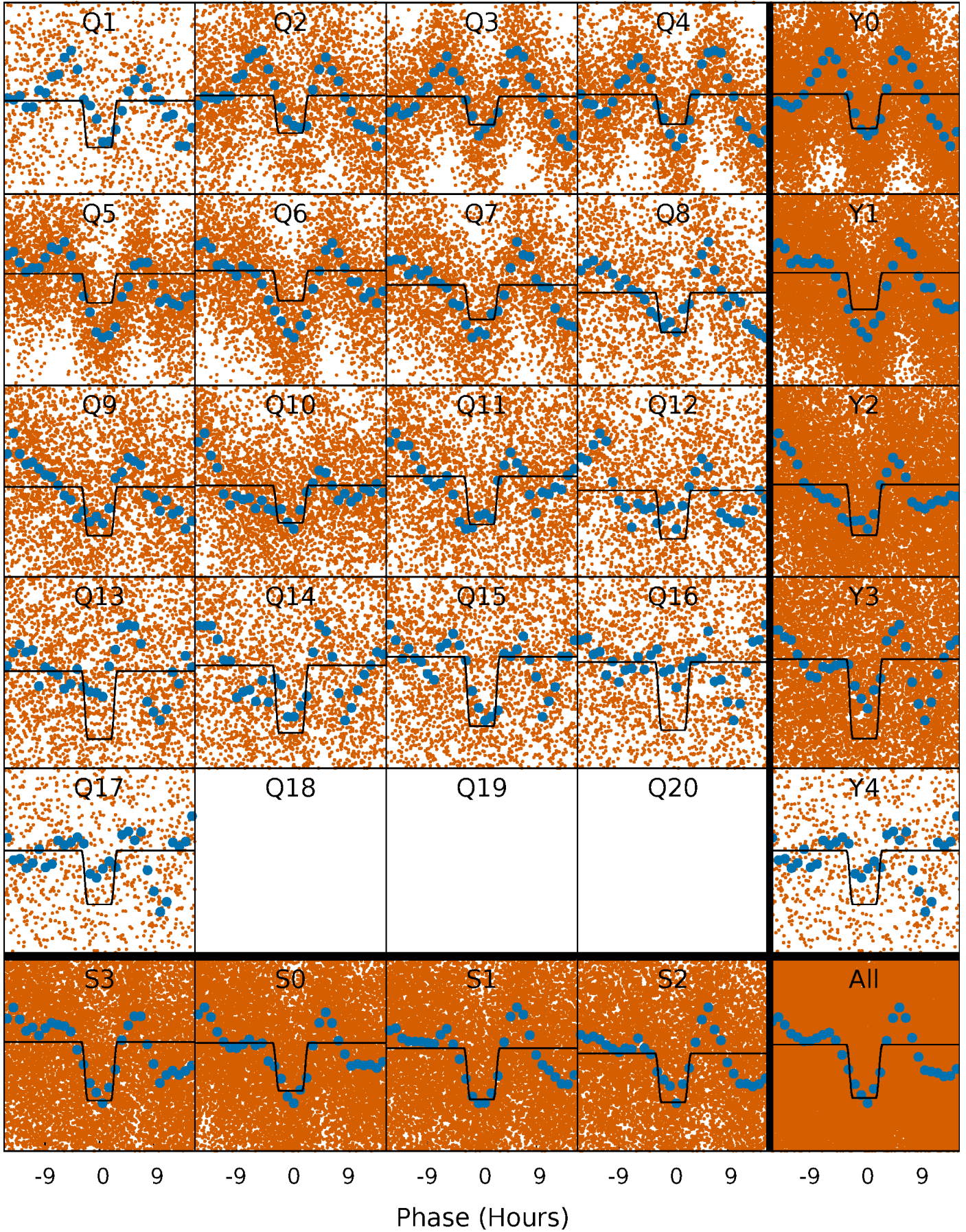
DV Quarter-Phased Transit Curves

TCE 006145614-01 P= 1.444880 Days $T_0=132.870340$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

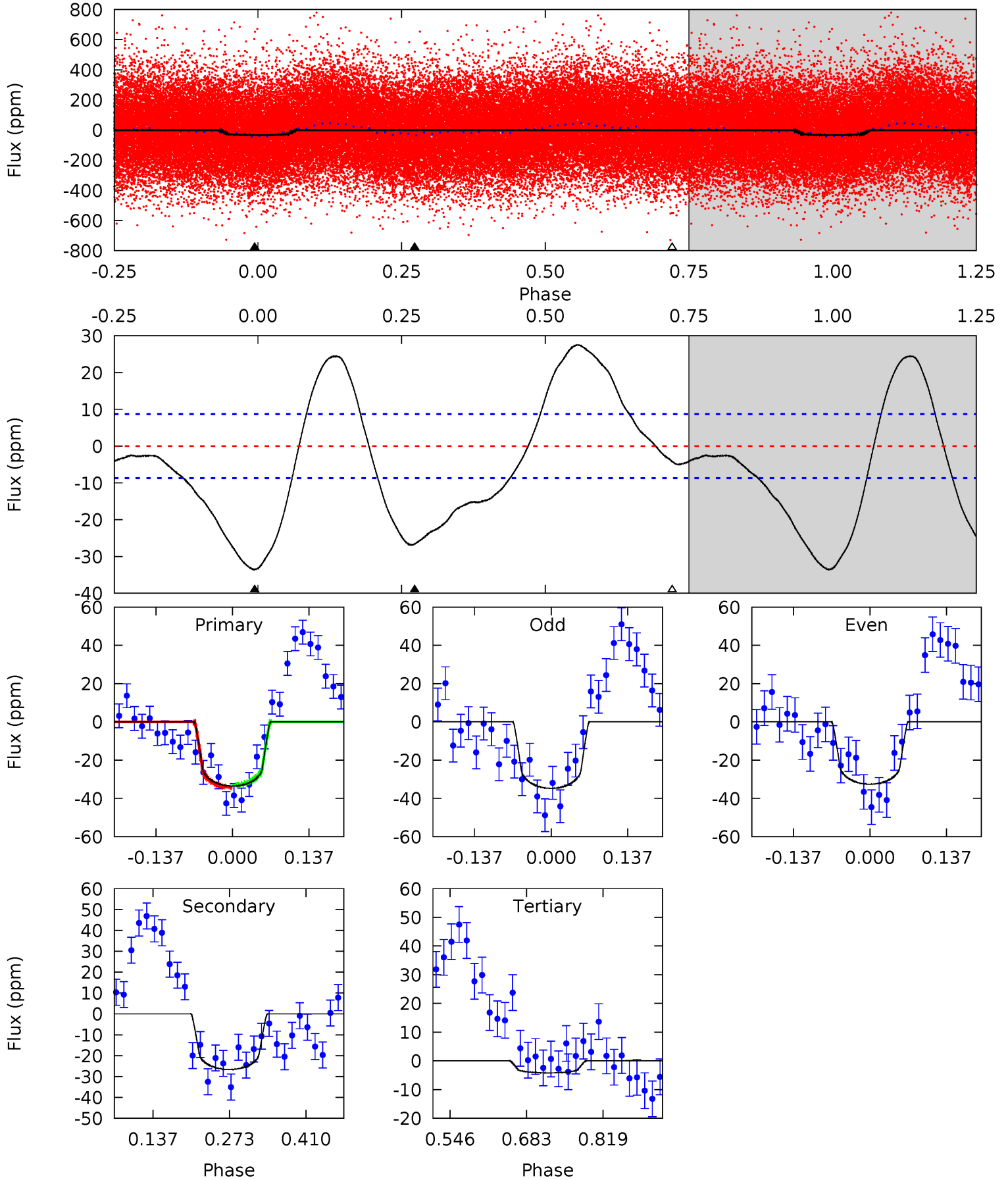
TCE 006145614-01 P= 1.444974 Days $T_0=132.787963$ (BKJD)



DV Model-Shift Uniqueness Test

006145614-01, P = 1.444880 Days, E = 131.425460 Days

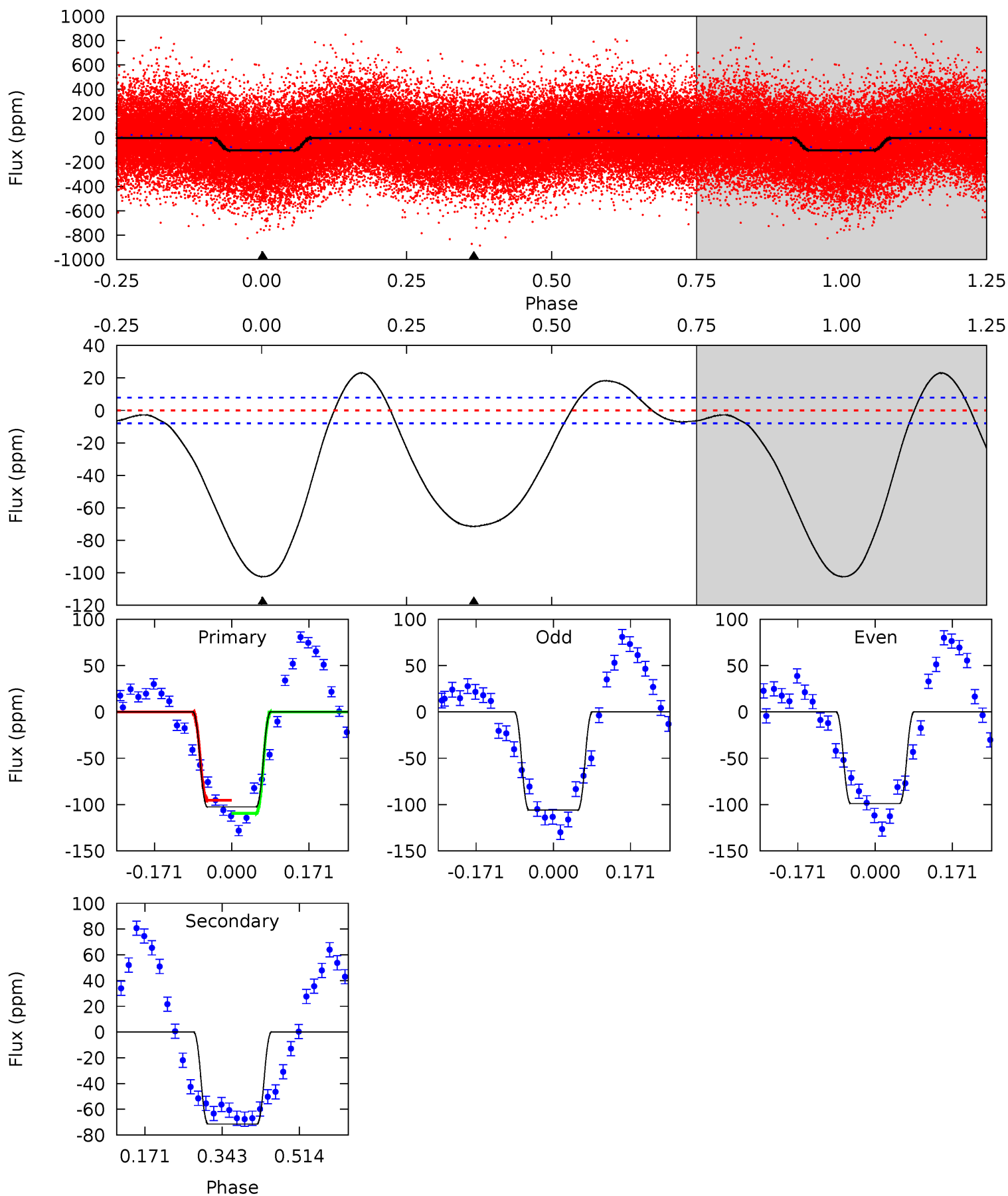
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.3	13.7	2.16	0	4.50	1.49	6.31	15.1	17.3	11.6	13.7	0.56	1.00	0.45	0.30



Alt Model-Shift Uniqueness Test

006145614-01, P = 1.444974 Days, E = 131.342989 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
57.6	40.2	0	0	4.45	1.37	5.67	57.6	57.6	40.2	40.2	1.98	1.05	0.18	3.99



Stellar Parameters For KIC 006145614

	$T_{\text{eff}} (K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6033^{+201}_{-201}	$3.477^{+0.376}_{-0.117}$	$-0.440^{+0.350}_{-0.300}$	$3.728^{+0.702}_{-1.639}$	$1.519^{+0.188}_{-0.439}$	$0.041^{+0.123}_{-0.015}$
	+3%/-3%	+11%/-3%	+80%/-68%	+19%/-44%	+12%/-29%	+298%/-37%
Source	PHO1	FLK73	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 006145614-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-27 ± 2	$2.16^{+1.06}_{-0.89}$	4123^{+322}_{-425}	5480^{+1700}_{-862}	$2.479^{+4.873}_{-1.289}$
Alt.	-71 ± 2	$4.03^{+1.24}_{-1.14}$	4152^{+300}_{-404}	5198^{+743}_{-511}	$1.970^{+1.779}_{-0.794}$

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

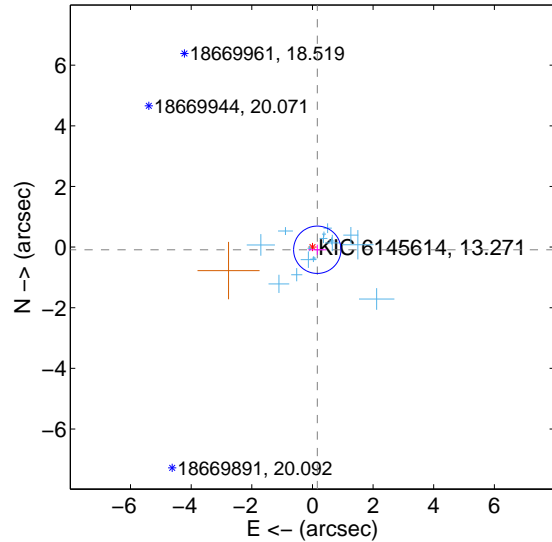
Supplemental centroid analysis for 006145614-01. Kepler magnitude: 13.27. Transit SNR 8.82

There are 16 quarters with good PRF difference image offsets

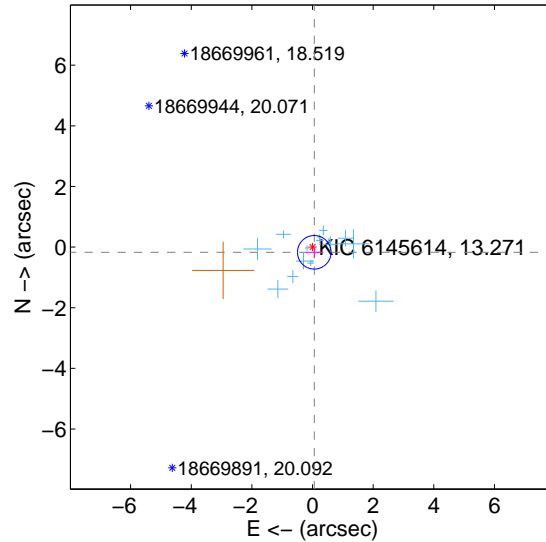
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.182 ± 0.260	0.70	-0.159 ± 0.298	-0.088 ± 0.167
PRF-fit source offset from KIC position	0.181 ± 0.185	0.98	-0.058 ± 0.285	-0.172 ± 0.177
photometric centroid source offset	3.98 ± 0.89	4.46	-3.85 ± 0.89	-0.98 ± 0.92

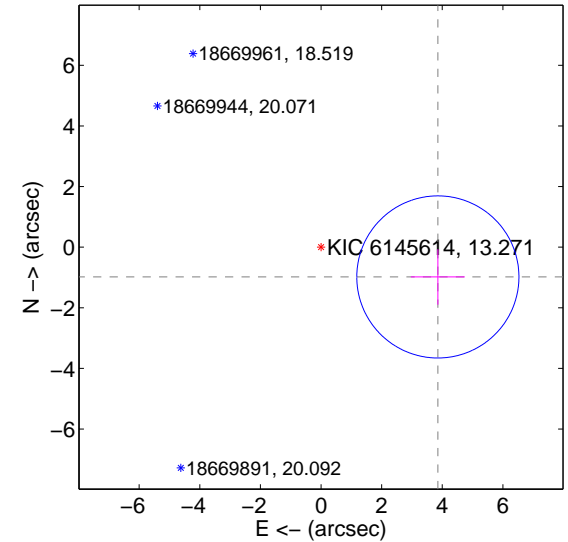
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

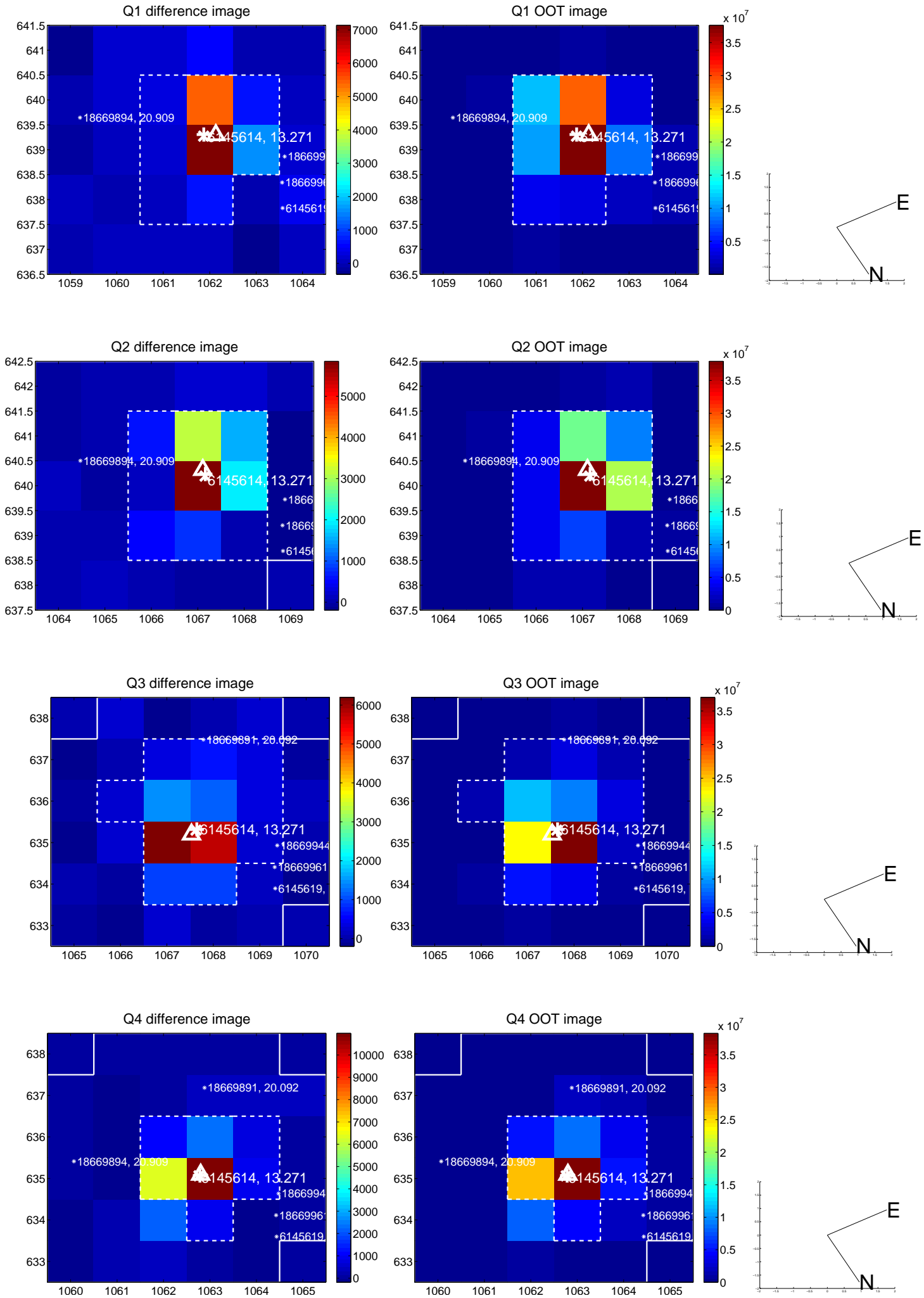


offset from photometric centroids

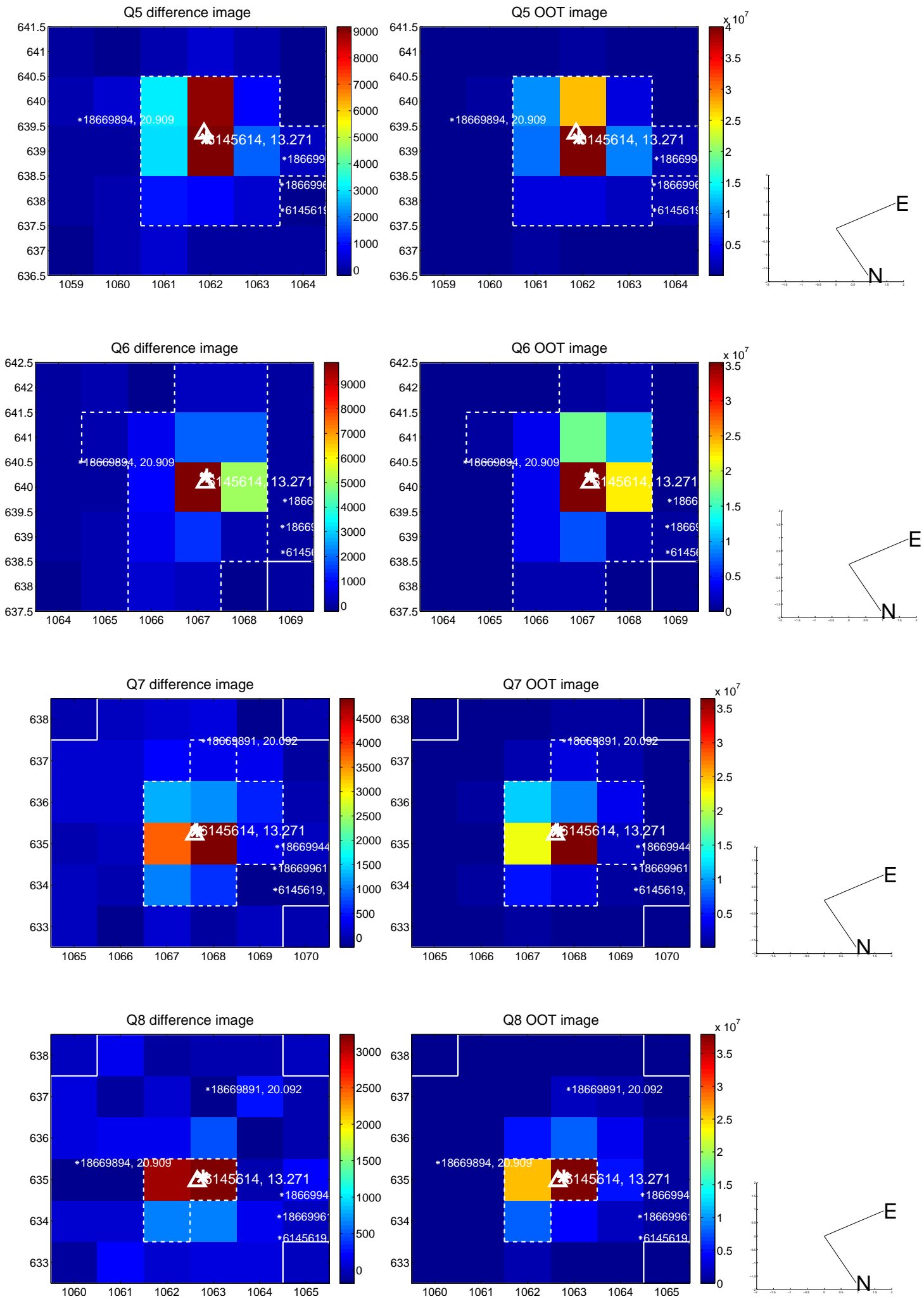


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

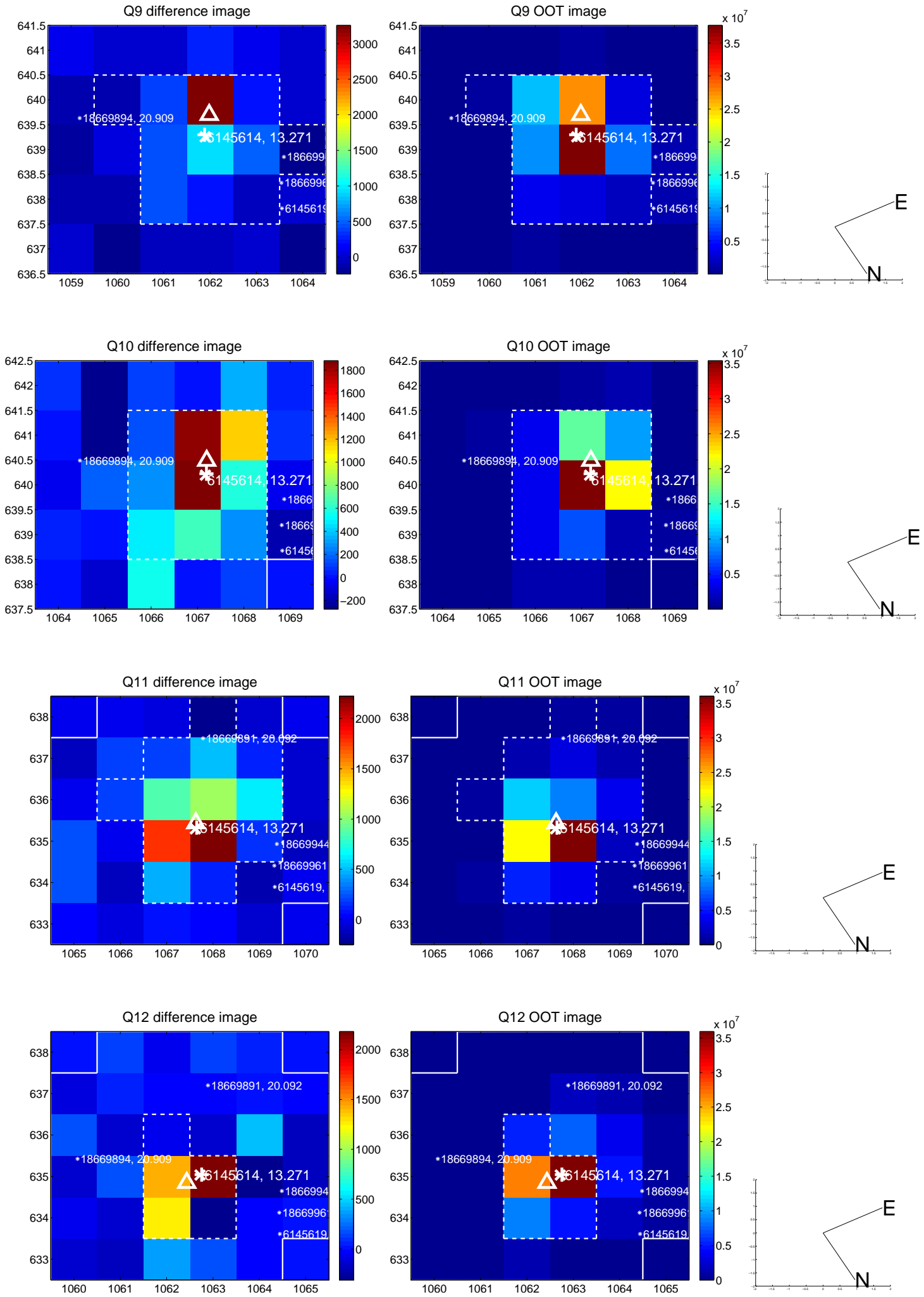
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



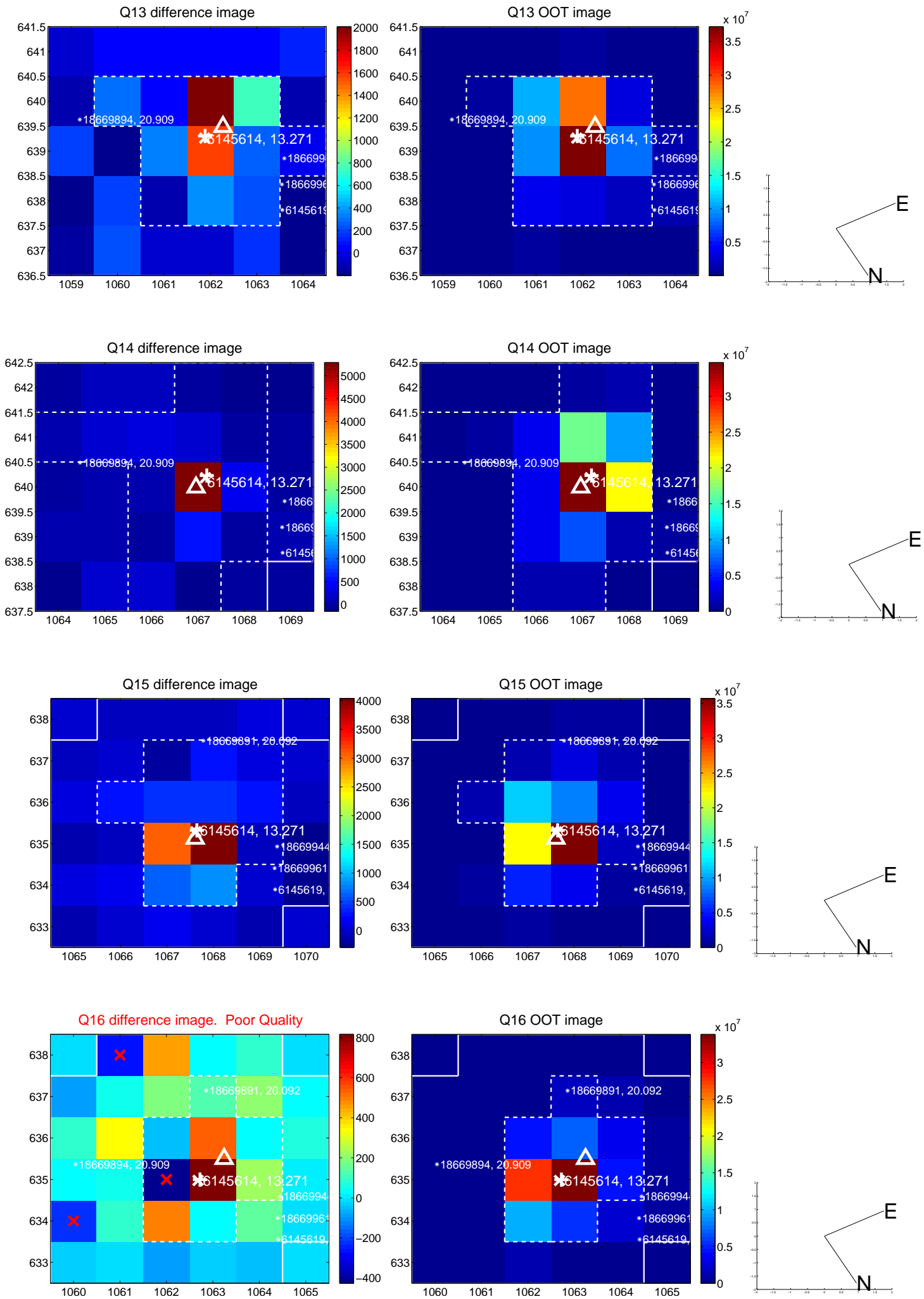
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

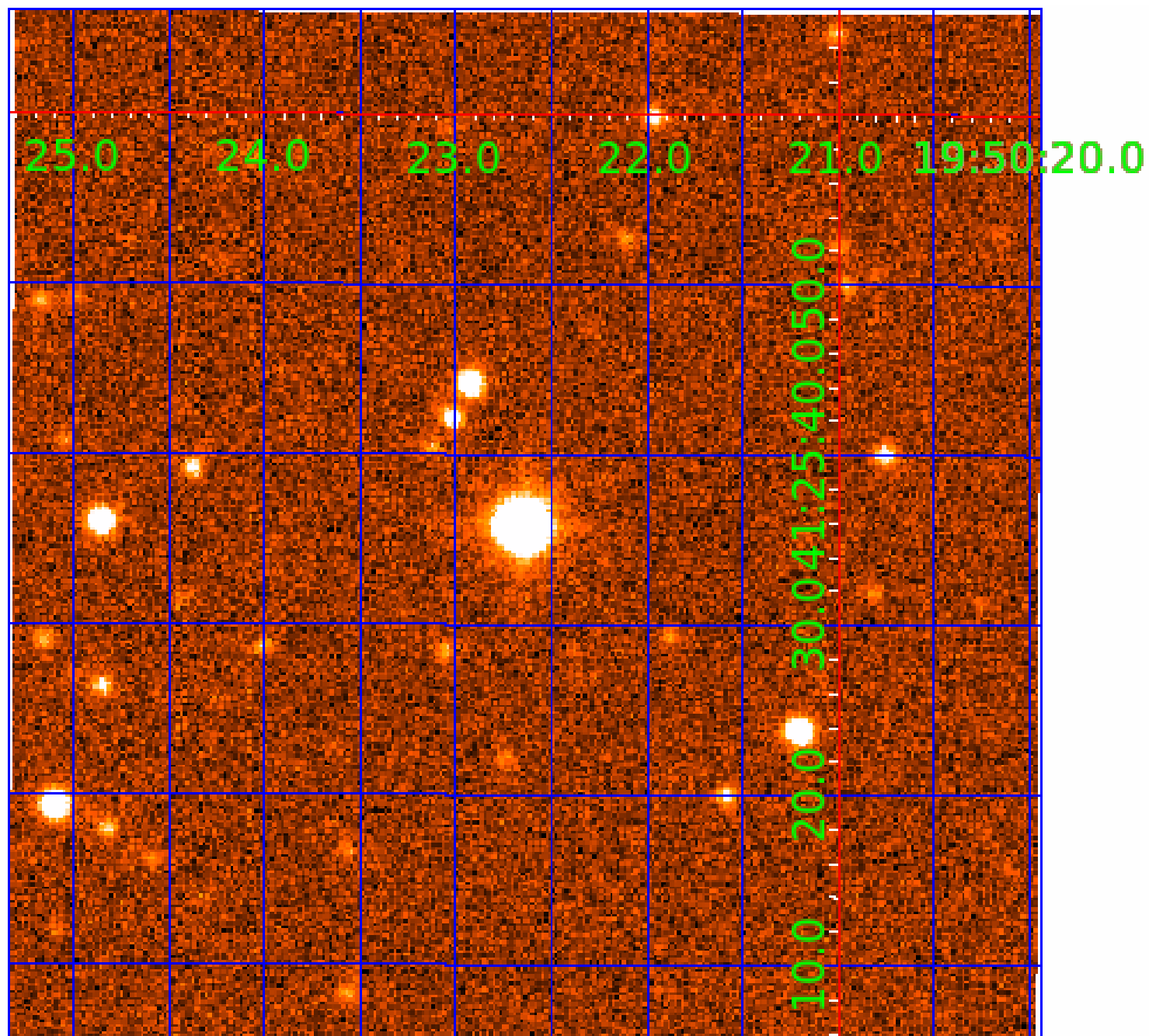


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 006145614

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})
006145614-01	OBS	No	1.444880	132.870340	29.2	4.293	10.9	8.8	3.73	6033	2.37	19932.85
006145614-02	OBS	No	1.444845	131.658932	31.5	17.338	13.2	8.7	3.73	6033	2.09	19933.48

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006145614-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV
006145614-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—LPP_DV—LPP_ALT—SAME_NTL_PERIOD—CENT_FEW_DIFFS

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

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

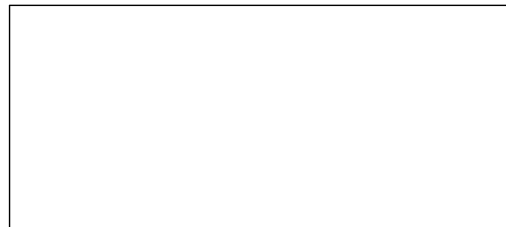
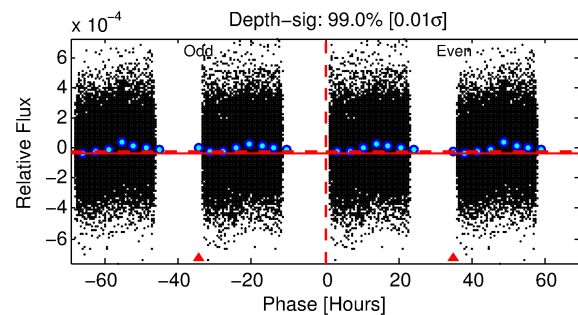
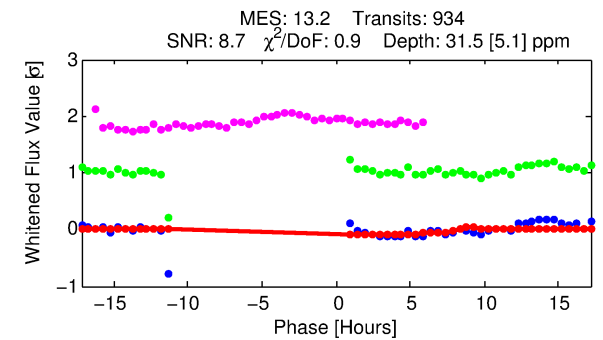
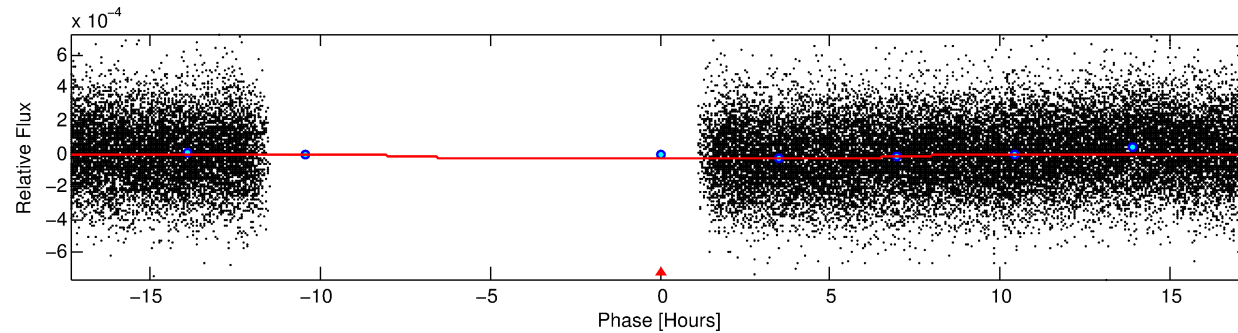
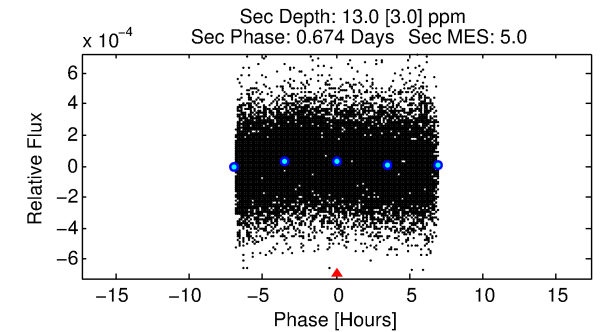
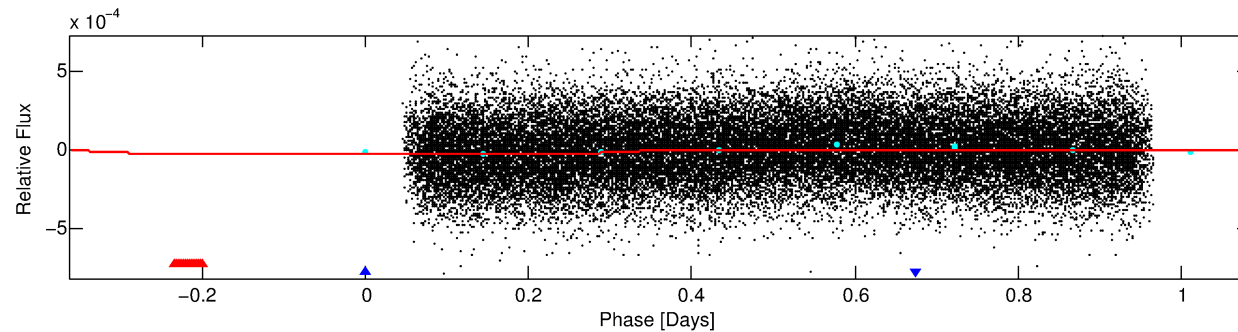
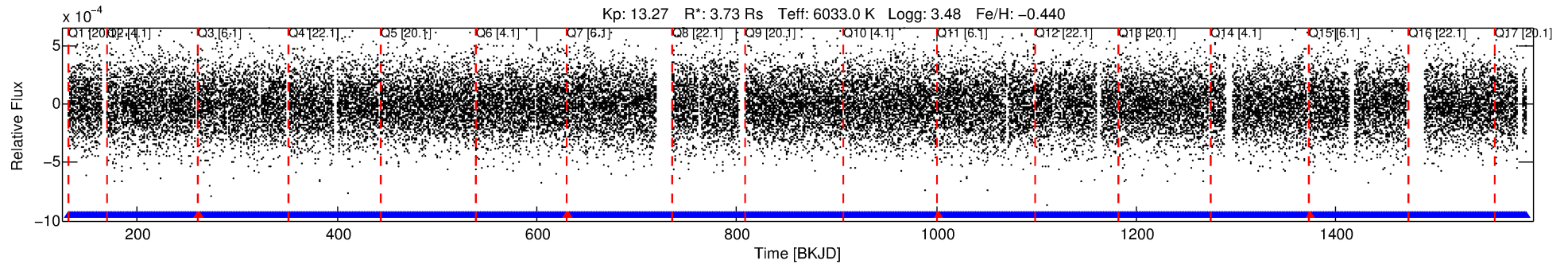
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006145614-02

No Significant Match Found

DV One-Page Summary

KIC: 6145614 Candidate: 2 of 2 Period: 1.445 d



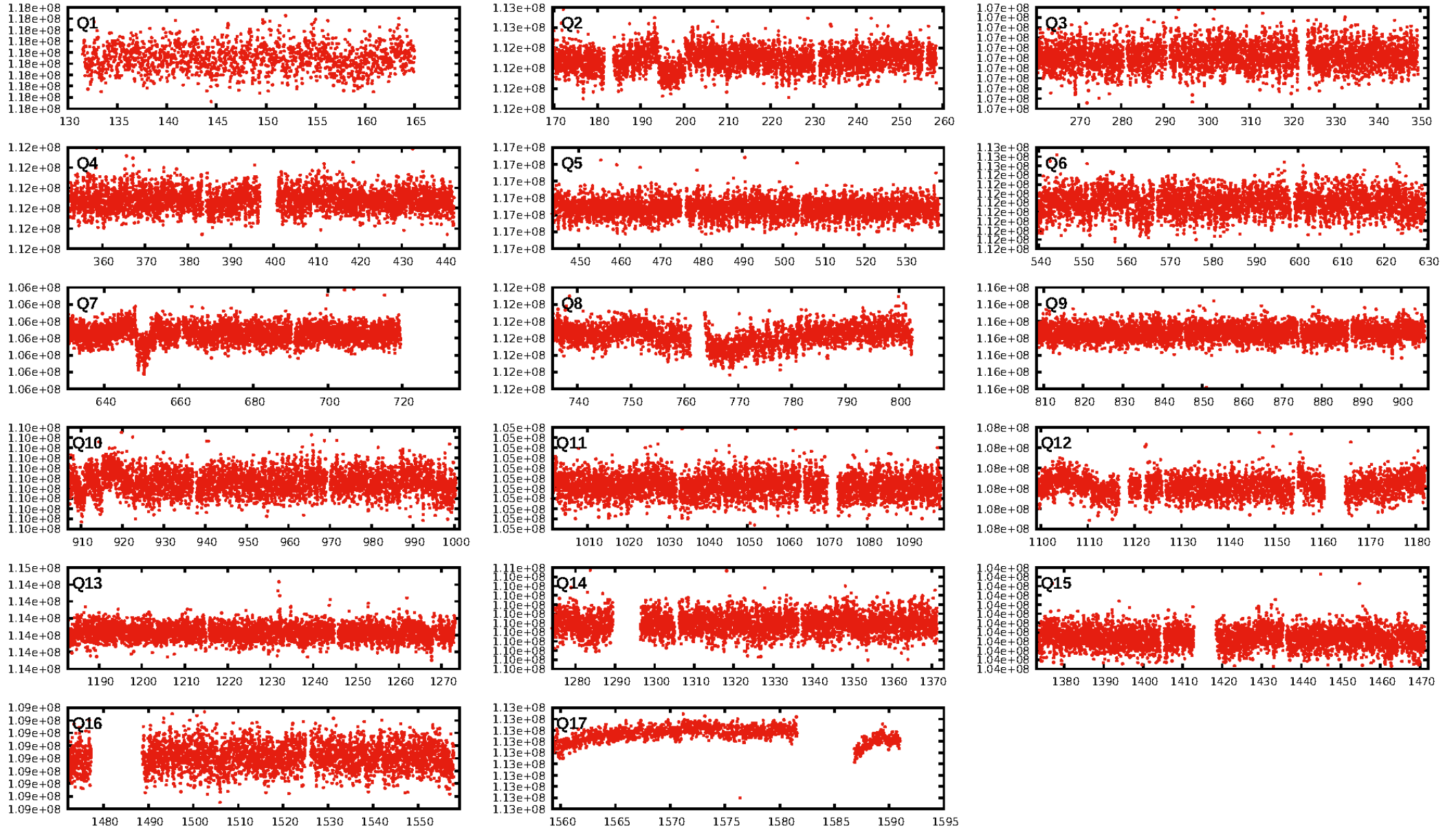
DV Fit Results:

Period = 1.44485 [0.00003] d
Epoch = 131.6589 [0.0486] BKJD
Rp/R* = 0.0051 [0.0014]
a/R* = 1.01 [0.02]
b = 0.03 [49.01]
Seff = 19933.48 [13174.27]
Teq = 3030 [501] K
Rp = 2.09 [1.07] Re
a = 0.0288 [0.0118] AU
Ag = 1.35 [1.17] [0.30σ]
Teffp = 5047 [752] K [2.23σ]

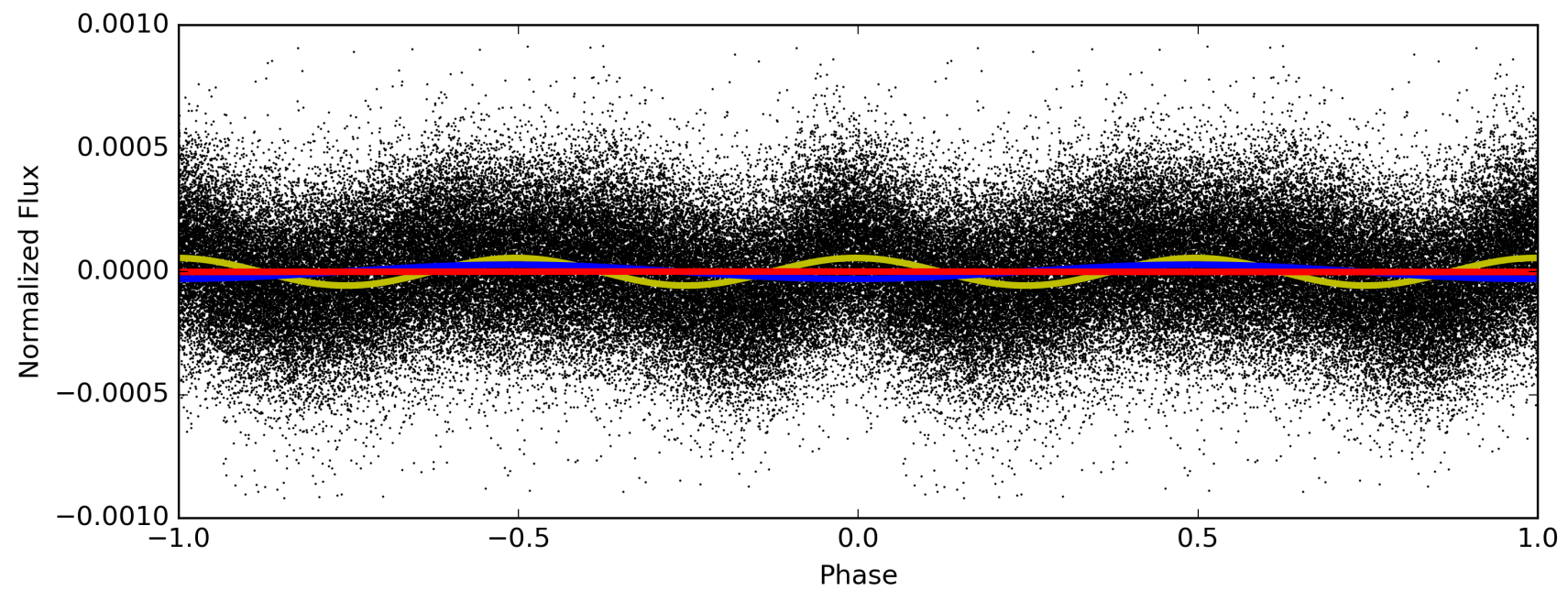
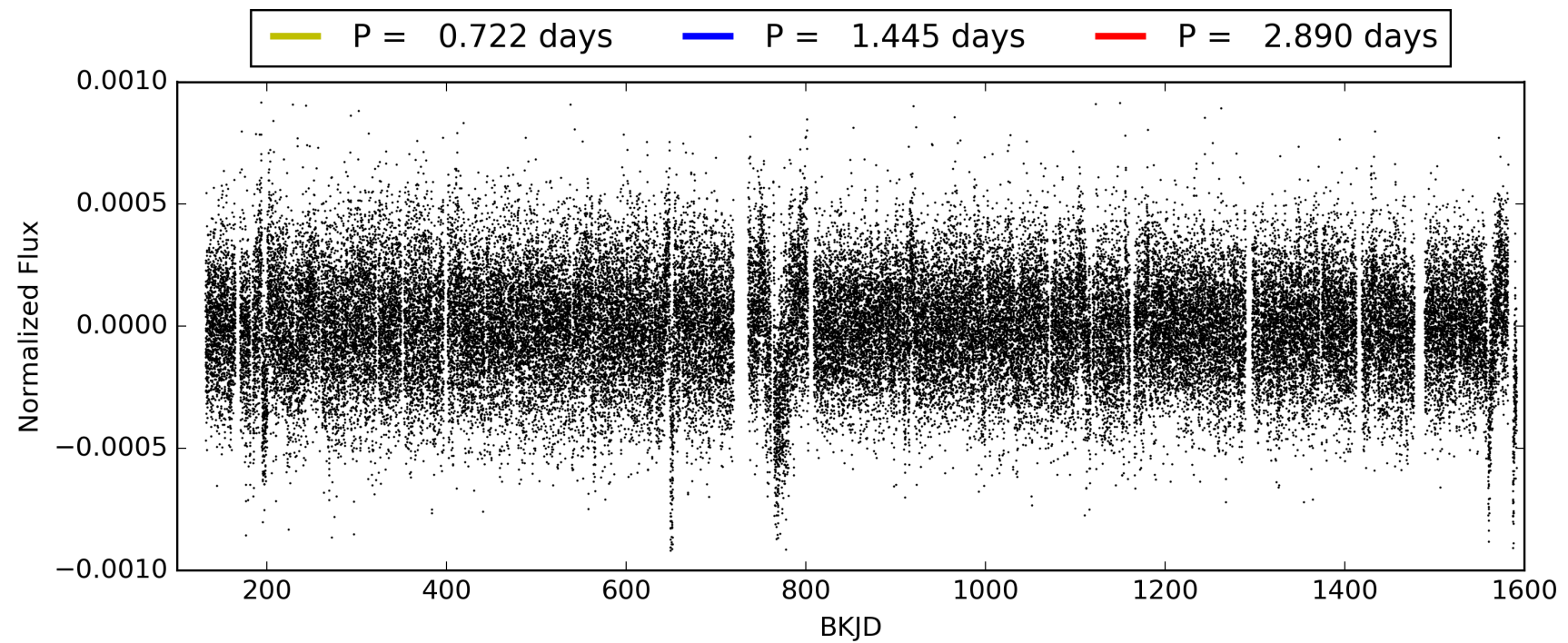
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.99 [885/891]
GhostDiagnostic-chr: -139.1
Centroid-sig: 2.4%
Centroid-so: 0.940 arcsec [2.00σ]
OotOffset-rm: N/A
KicOffset-rm: N/A
OotOffset-st: 0/0/0 [0]
KicOffset-st: 0/0/0 [0]
DiffImageQuality-fgm: N/A
DiffImageOverlap-fno: 0.00 [0/17]

TCE 006145614-02, PDC Light Curves

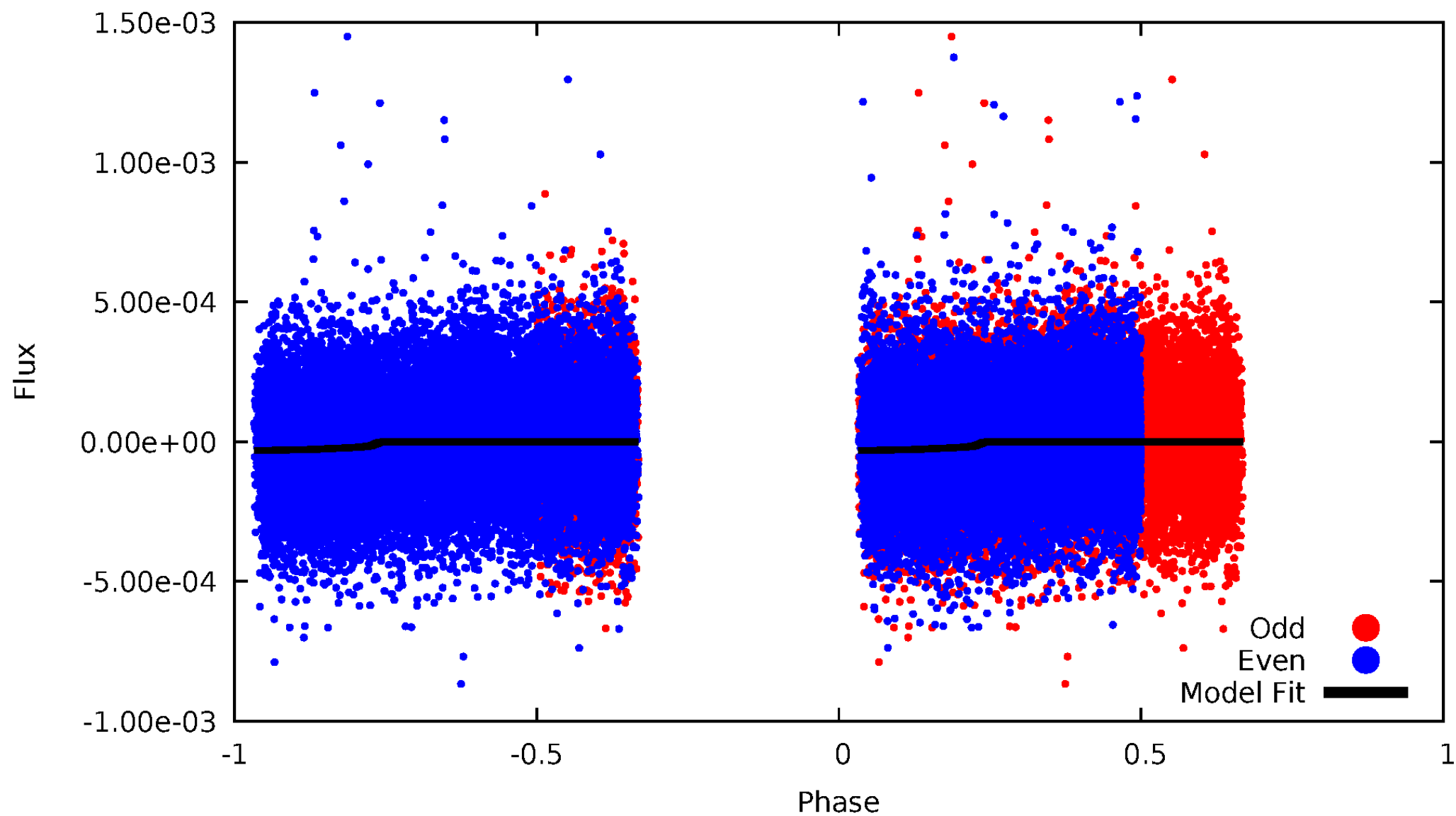


TCE 006145614-02



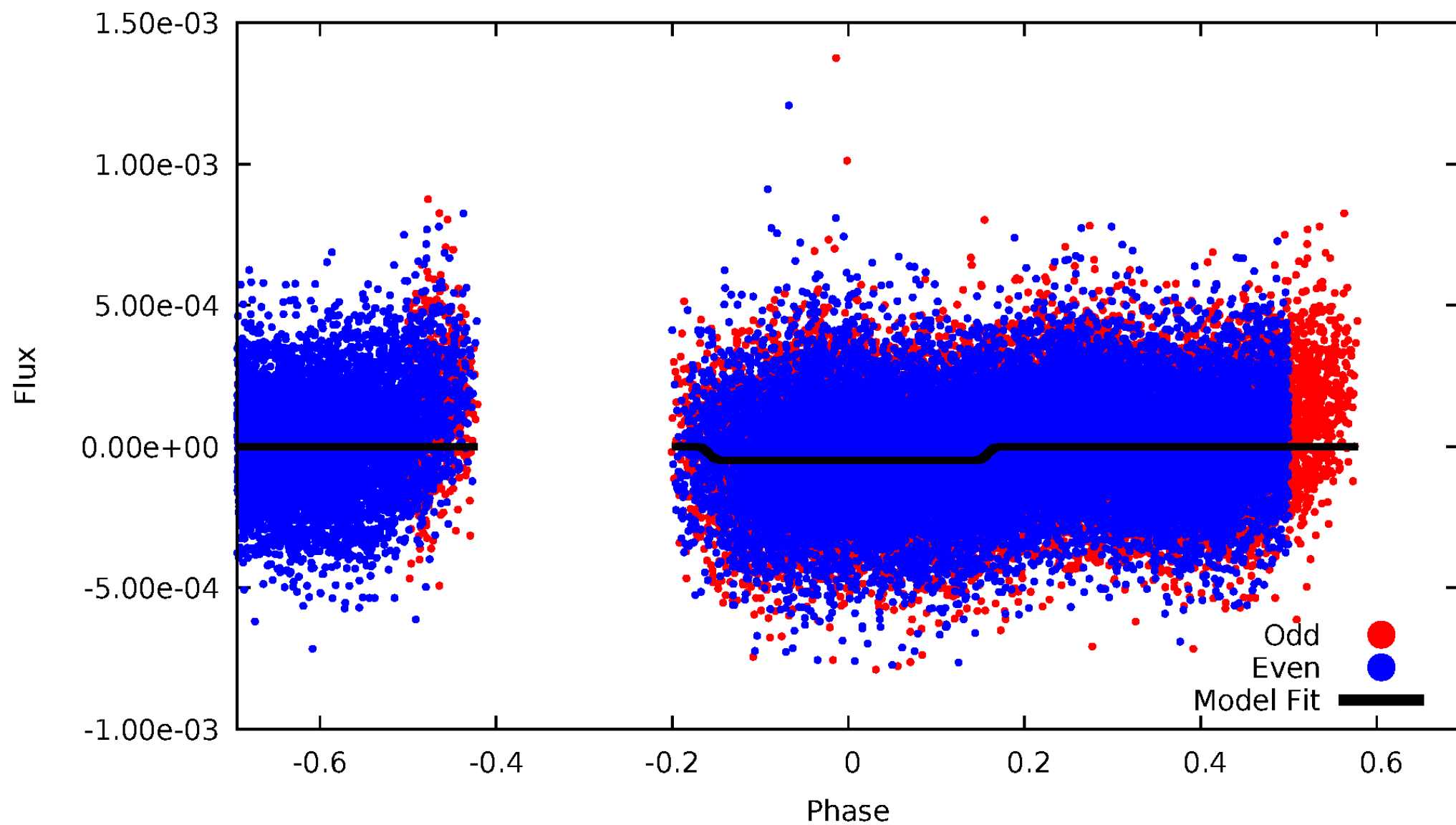
DV Odd/Even

TCE 006145614-02



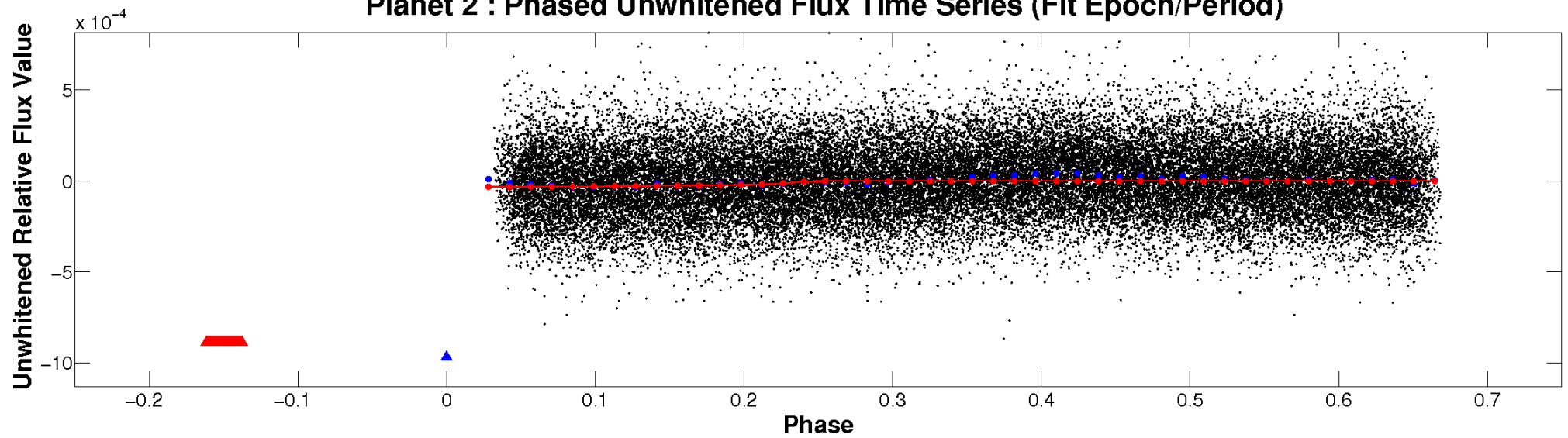
ALT Odd/Even

TCE 006145614-02

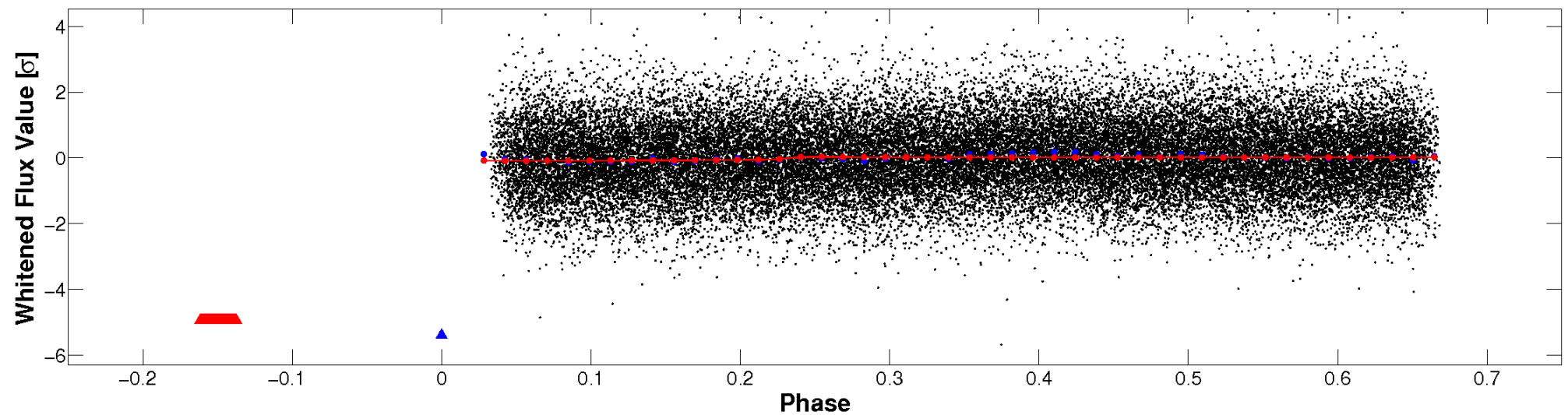


Non-Whitened Vs. Whitened Light Curve

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

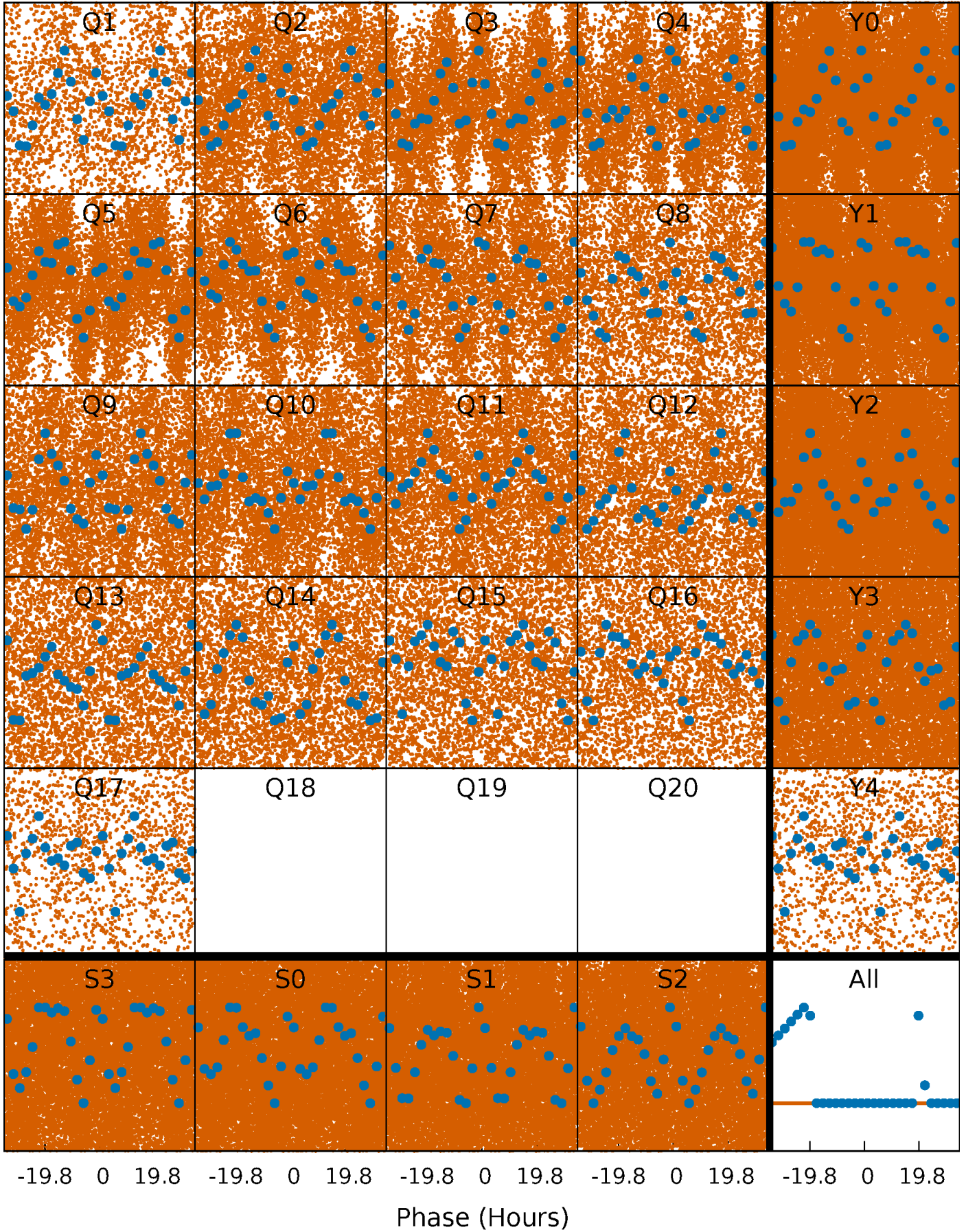


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



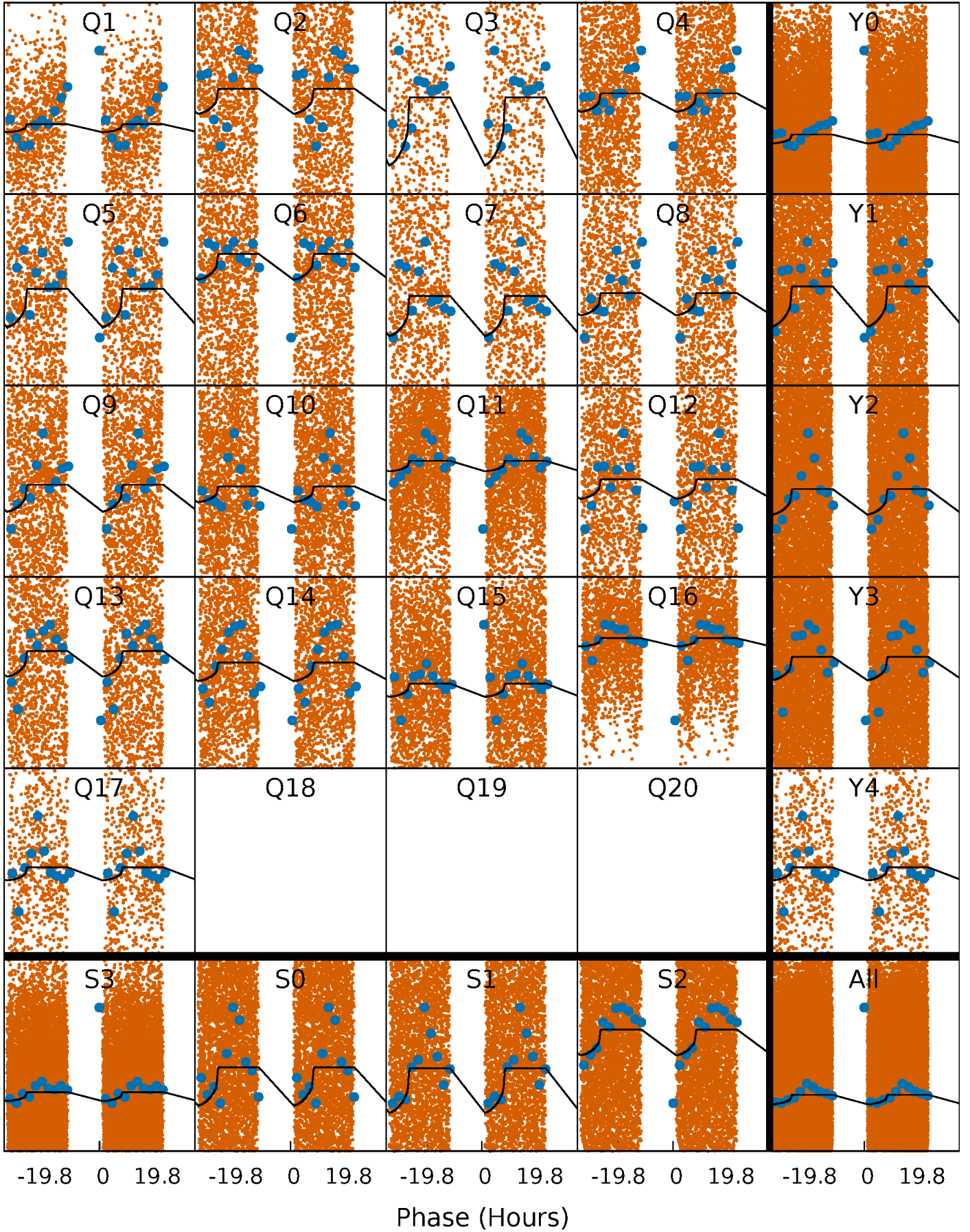
PDC Quarter-Phased Transit Curves

TCE 006145614-02 P= 1.444845 Days $T_0=131.658932$ (BKJD)



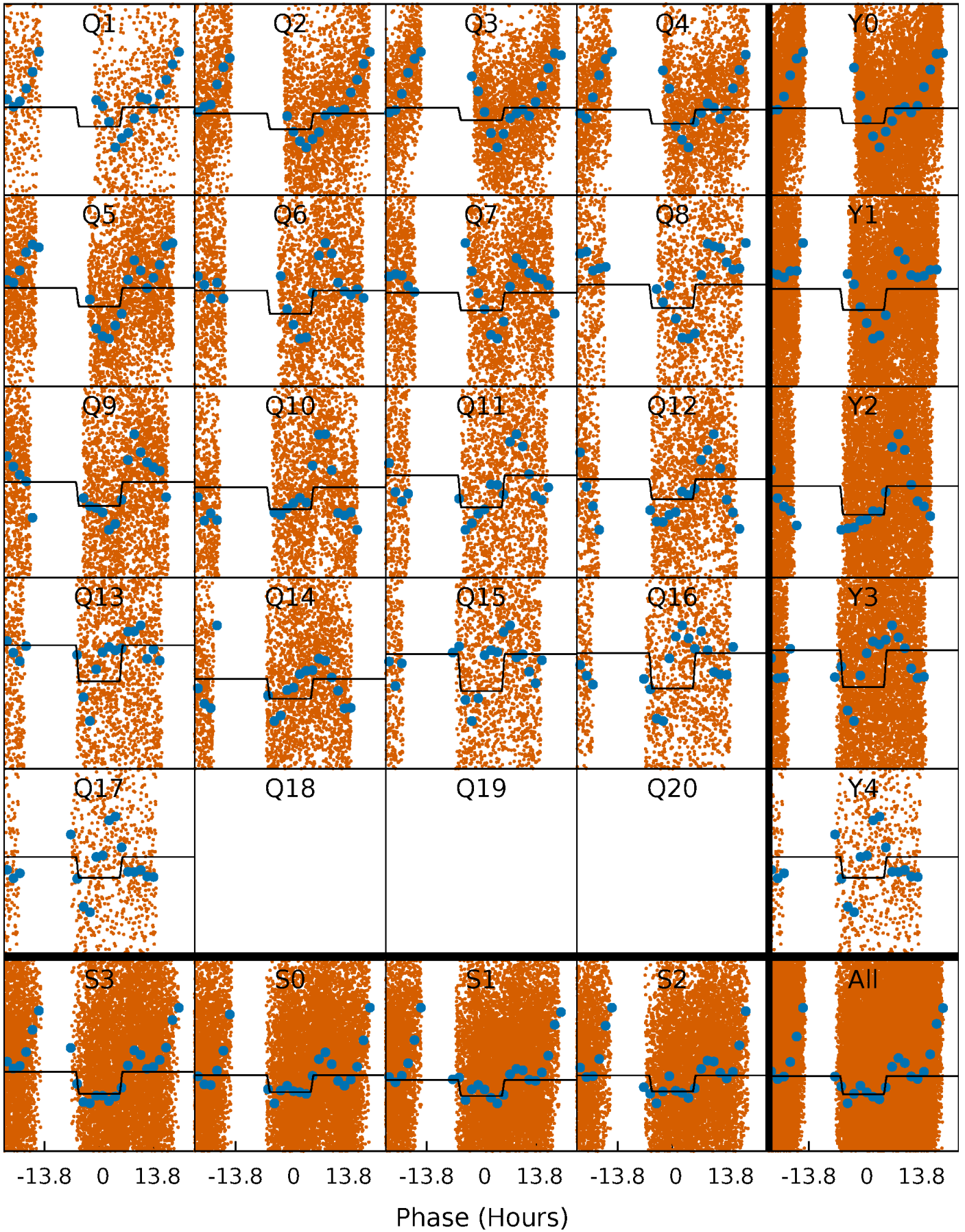
DV Quarter-Phased Transit Curves

TCE 006145614-02 P= 1.444845 Days $T_0=131.658932$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

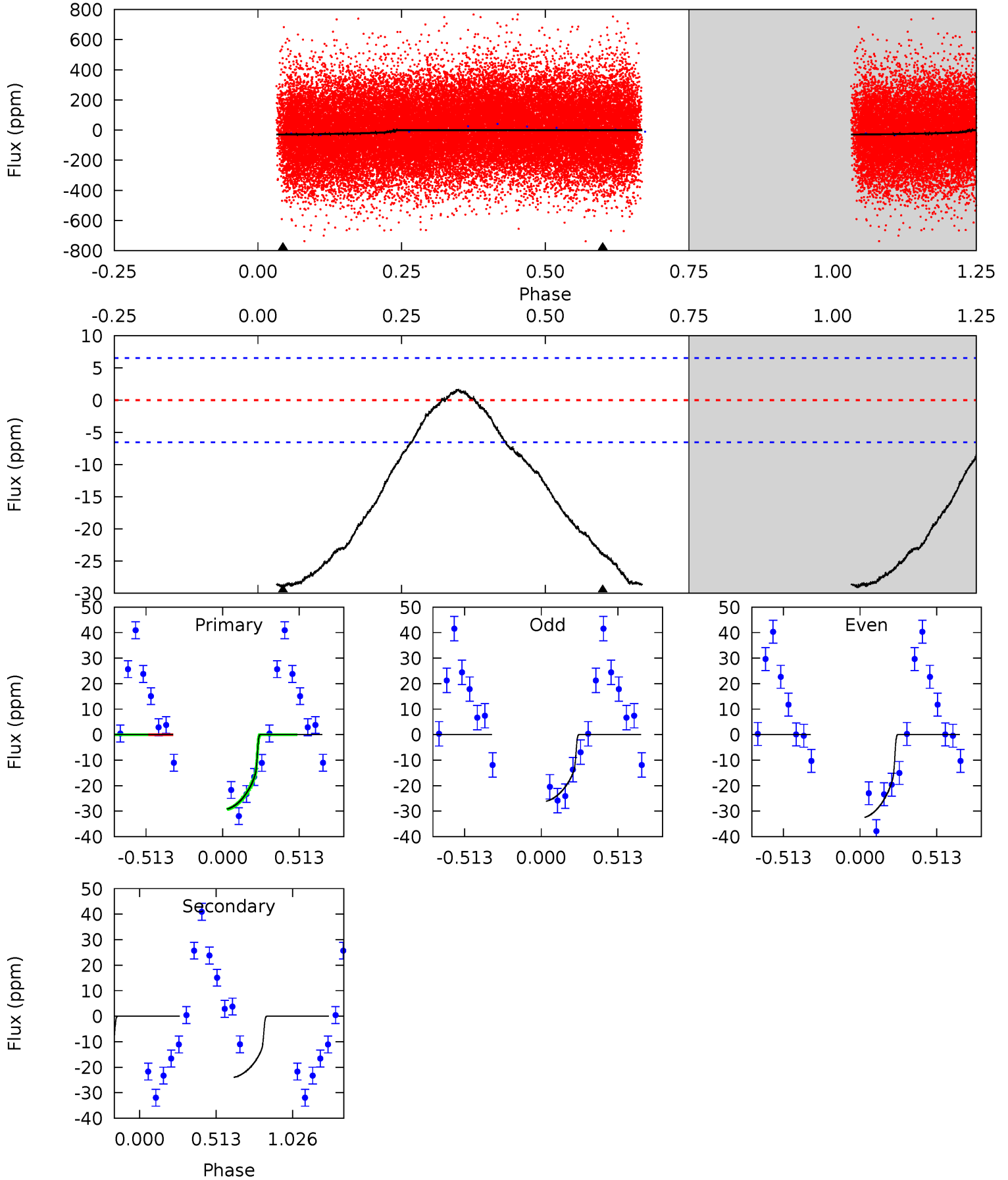
TCE 006145614-02 P= 1.445123 Days $T_0=131.752186$ (BKJD)



DV Model-Shift Uniqueness Test

006145614-02, P = 1.444845 Days, E = 131.658932 Days

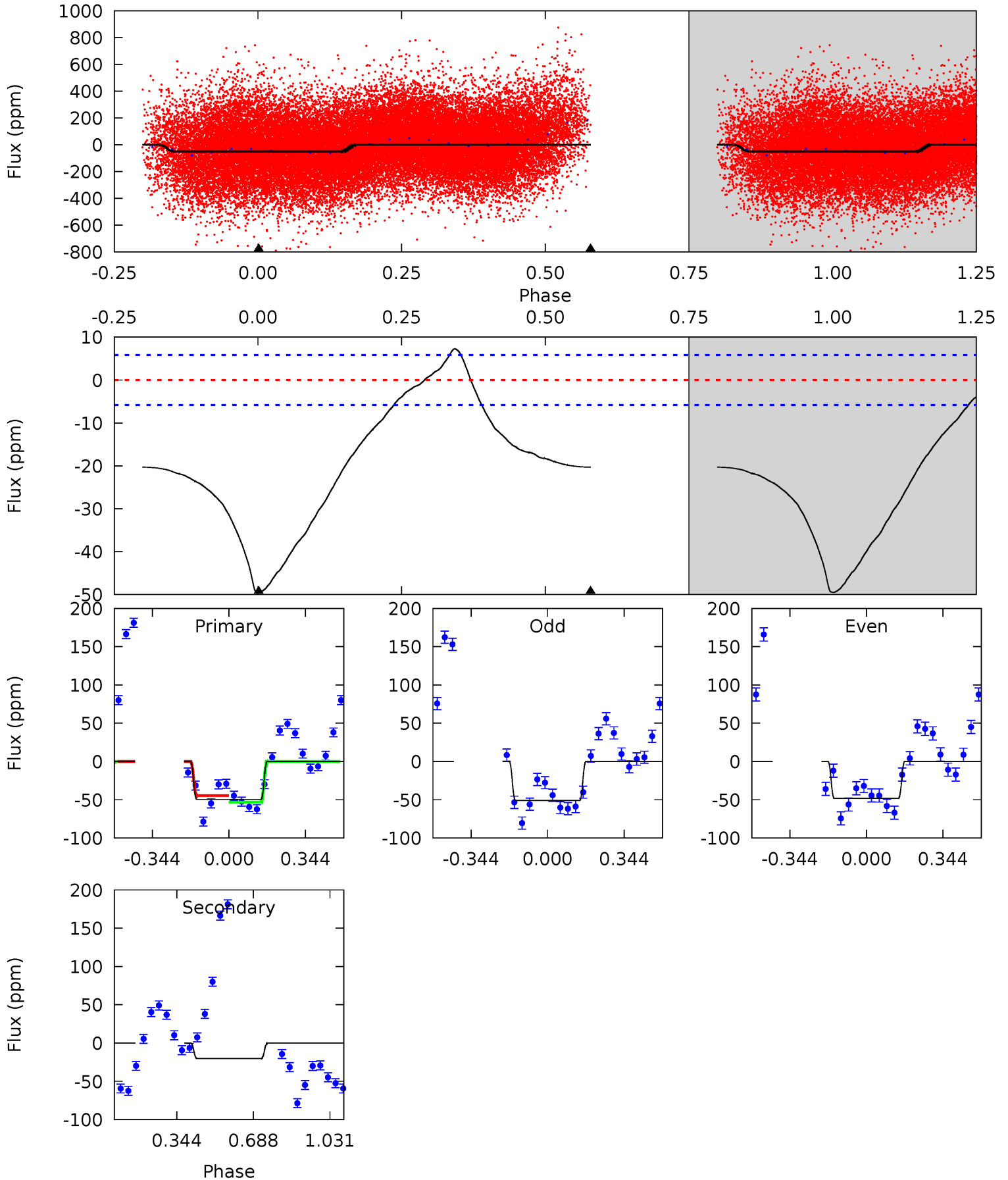
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.7	15.4	0	0	4.21	0.65	0.84	18.7	18.7	15.4	15.4	2.04	1.07	0.06	0



Alt Model-Shift Uniqueness Test

006145614-02, P = 1.445123 Days, E = 130.307063 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
36.4	14.9	0	0	4.30	0.95	1.27	36.4	36.4	14.9	14.9	0.99	1.02	0.13	3.06



Stellar Parameters For KIC 006145614

	$T_{\text{eff}} (K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6033^{+201}_{-201}	$3.477^{+0.376}_{-0.117}$	$-0.440^{+0.350}_{-0.300}$	$3.728^{+0.702}_{-1.639}$	$1.519^{+0.188}_{-0.439}$	$0.041^{+0.123}_{-0.015}$
	+3%/-3%	+11%/-3%	+80%/-68%	+19%/-44%	+12%/-29%	+298%/-37%
Source	PHO1	FLK73	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 006145614-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-24 ± 2	$1.90^{+0.69}_{-0.60}$	4140^{+279}_{-439}	5758^{+1083}_{-698}	$2.968^{+3.150}_{-1.325}$
Alt.	-20 ± 1	$2.58^{+0.76}_{-0.73}$	4115^{+325}_{-419}	4733^{+564}_{-498}	$1.375^{+1.099}_{-0.547}$

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

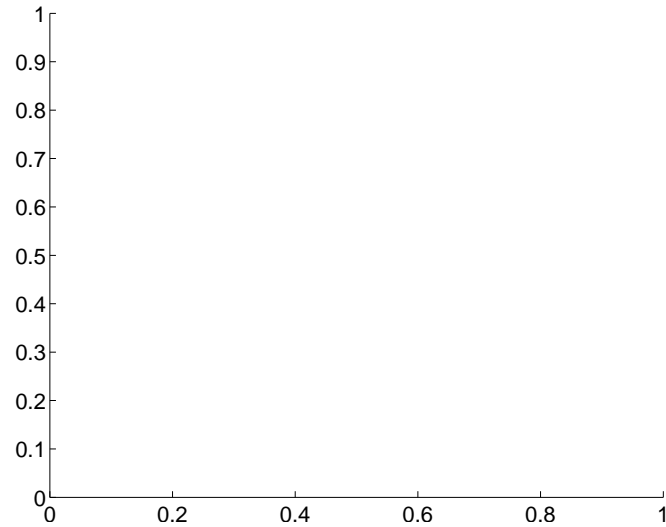
Supplemental centroid analysis for 006145614-02. Kepler magnitude: 13.27. Transit SNR 8.68

There are 0 quarters with good PRF difference image offsets

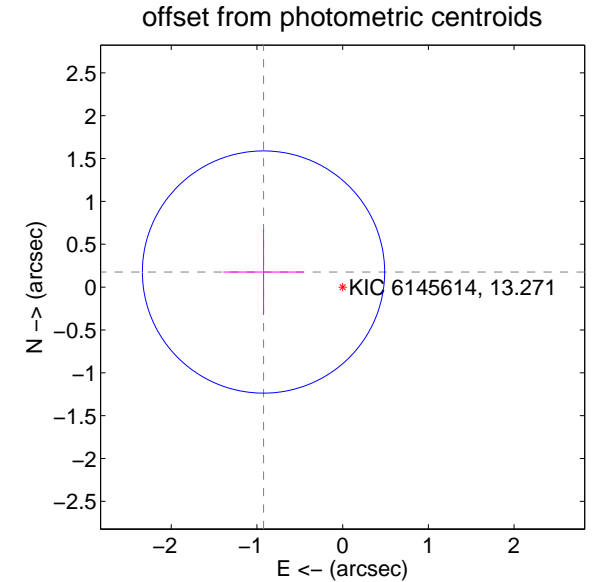
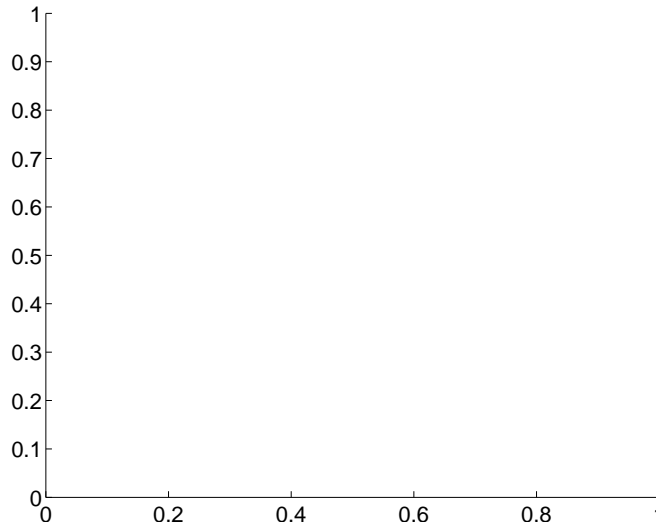
The direct PRF centroid is offset from the target star catalog position by about NaN arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	—	—	—	—
PRF-fit source offset from KIC position	—	—	—	—
photometric centroid source offset	0.94 ± 0.47	2.00	0.92 ± 0.47	0.18 ± 0.50

There is no PRF-fit offset from OOT-fit

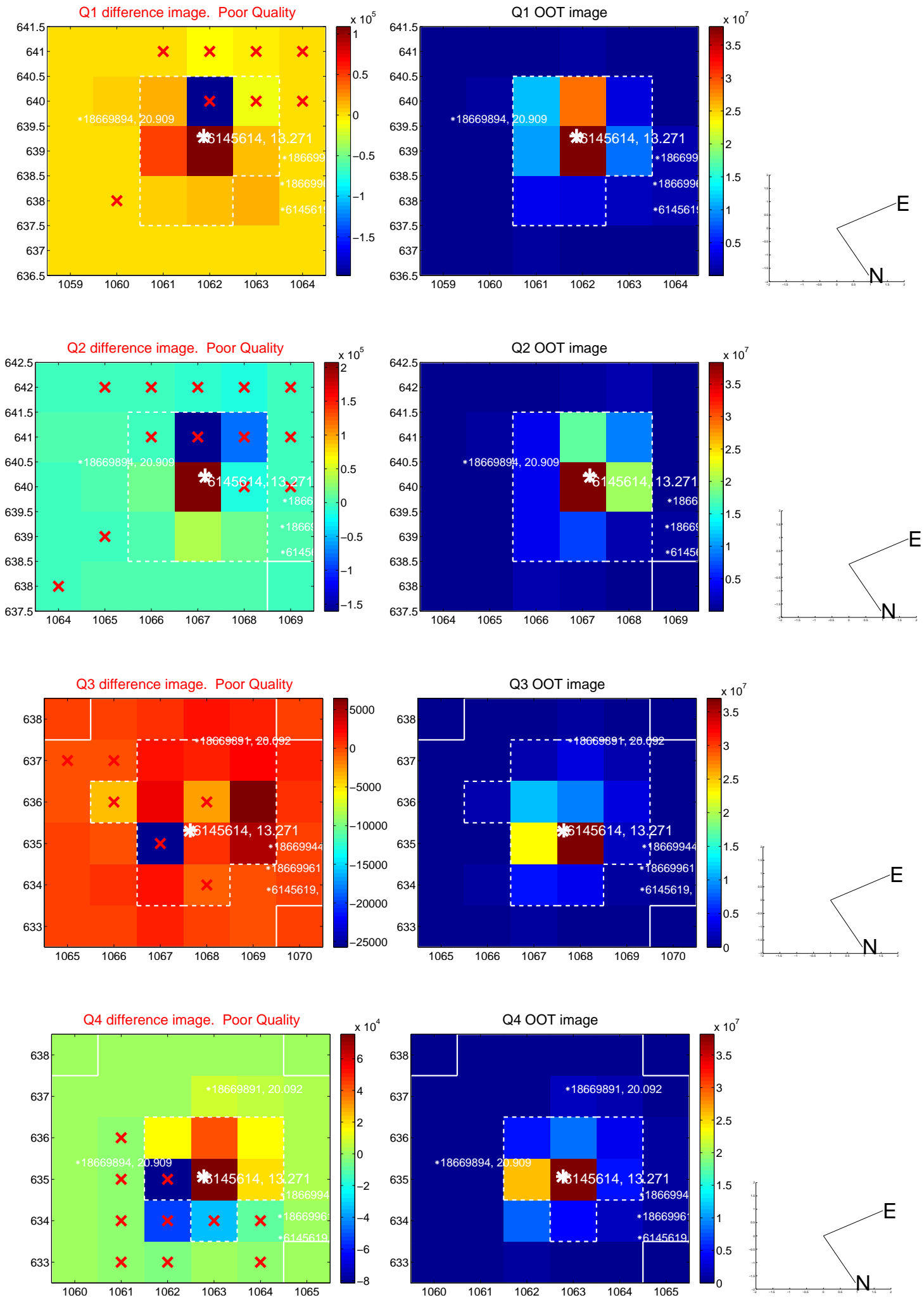


There is no PRF-fit offset from KIC

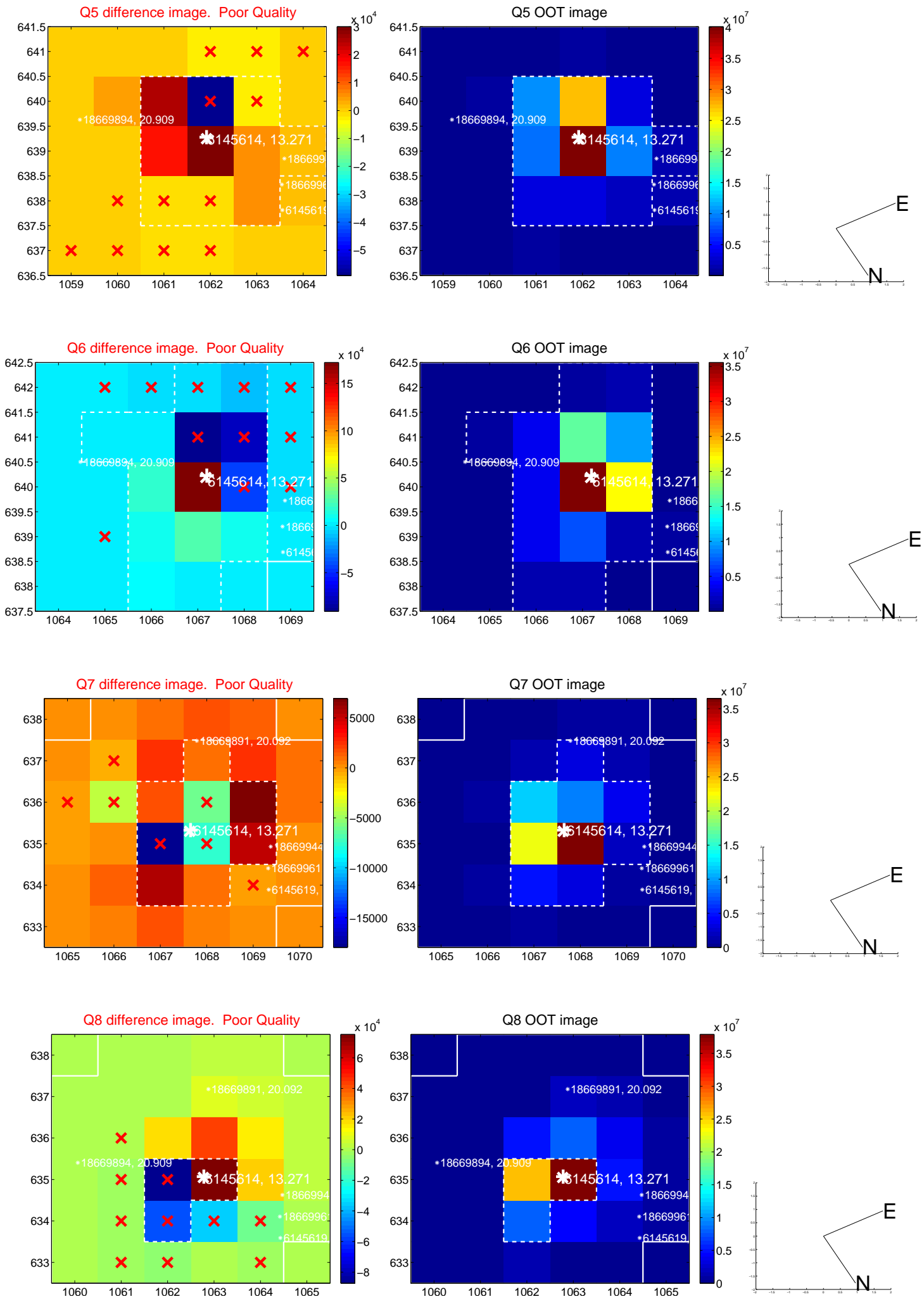


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

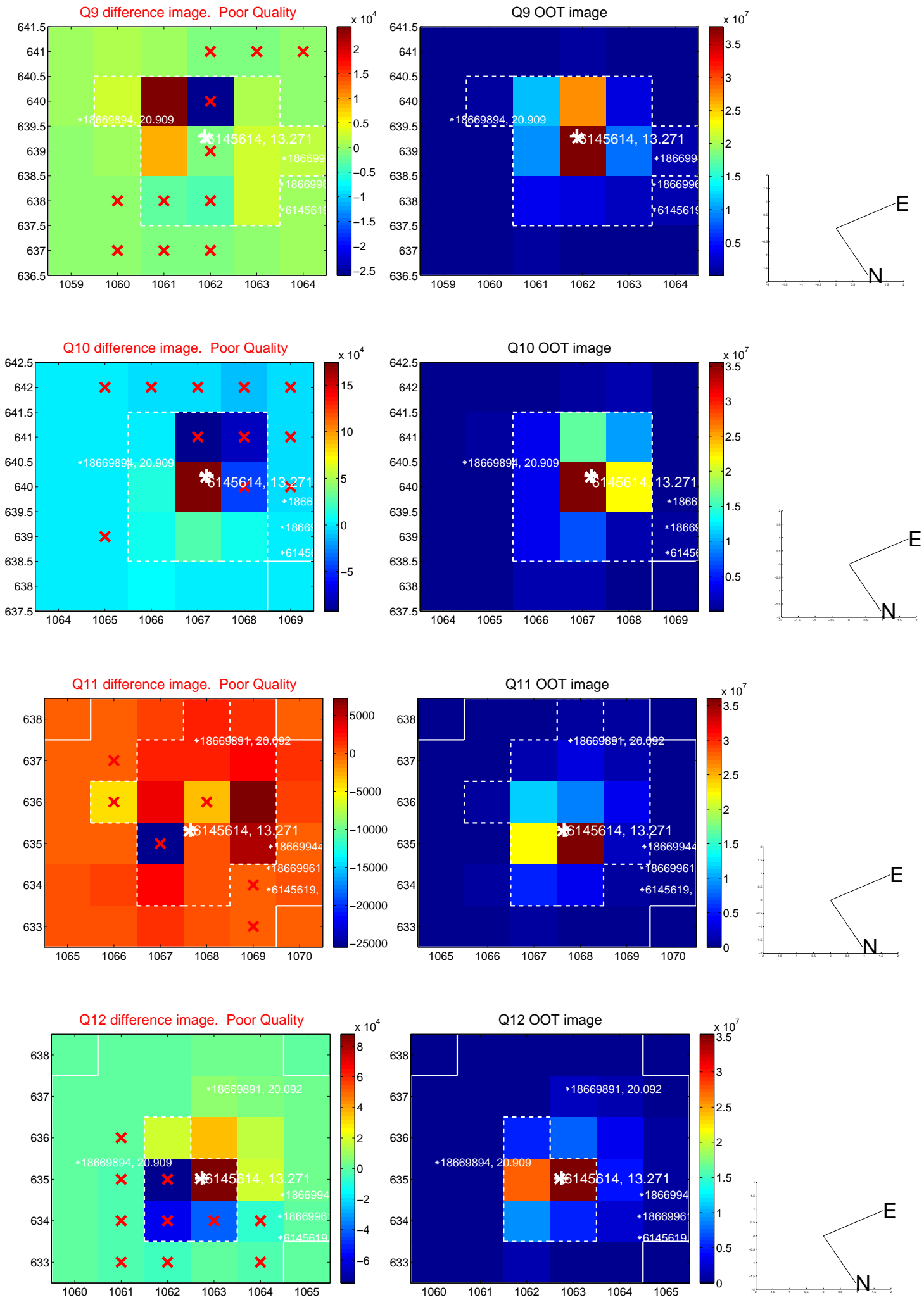
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



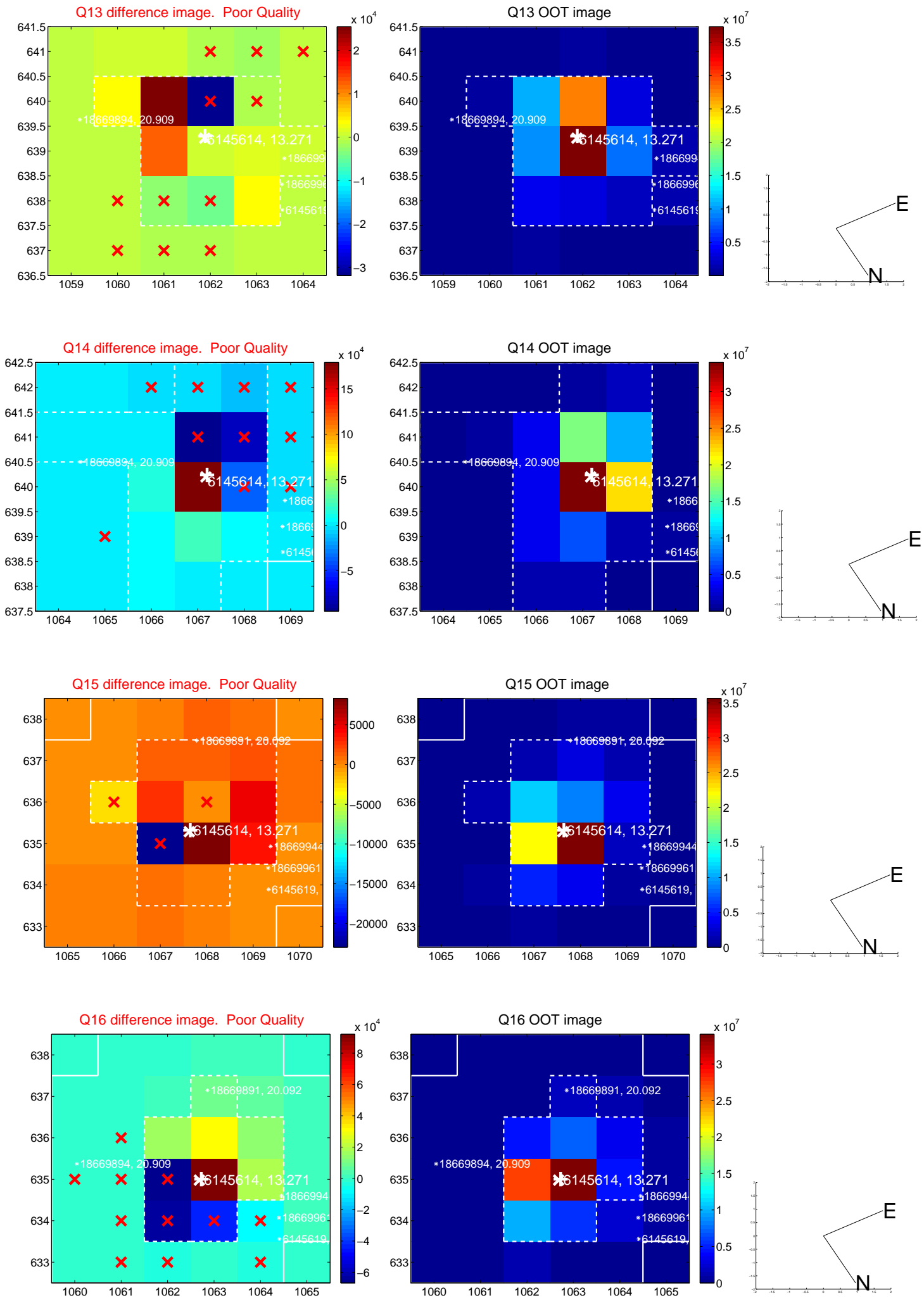
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



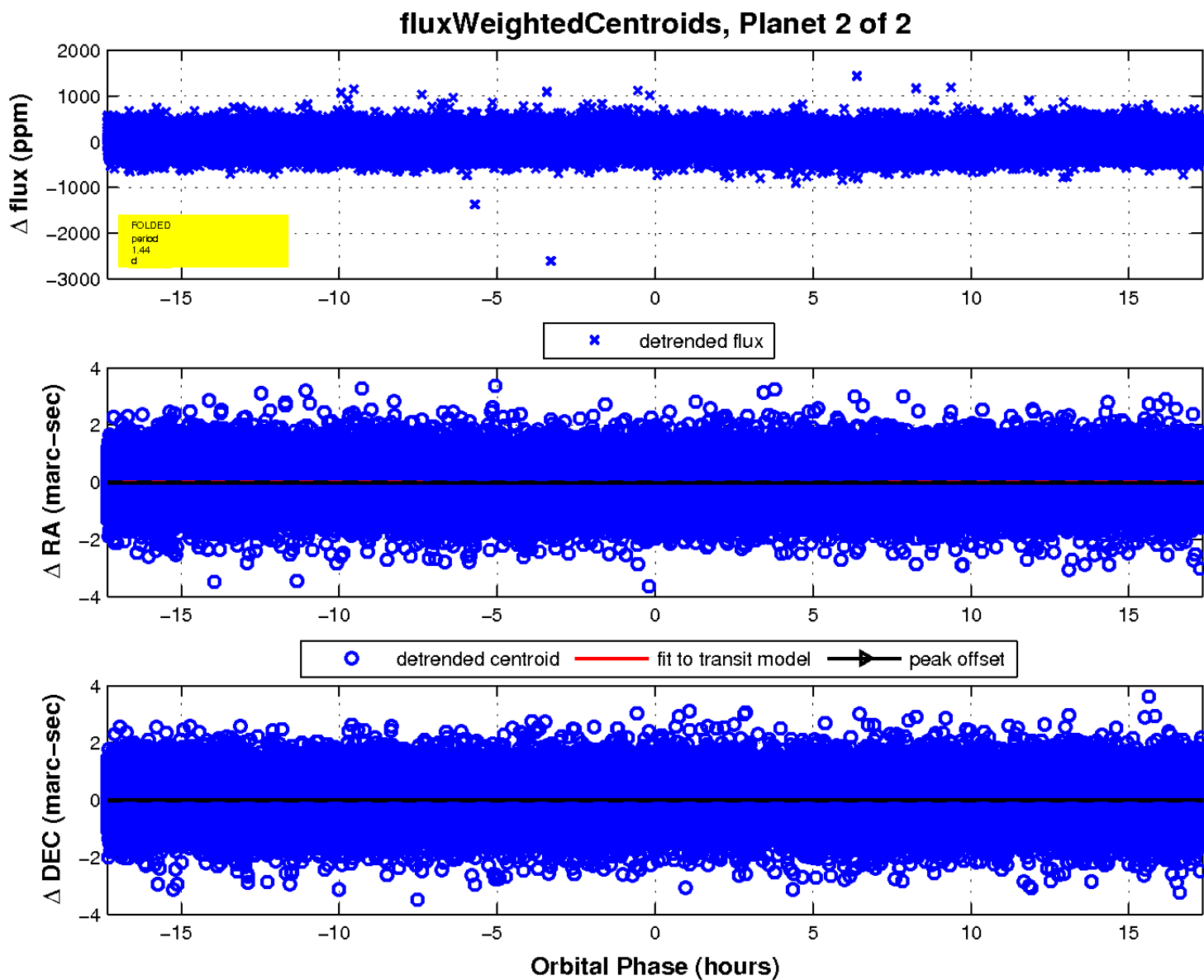
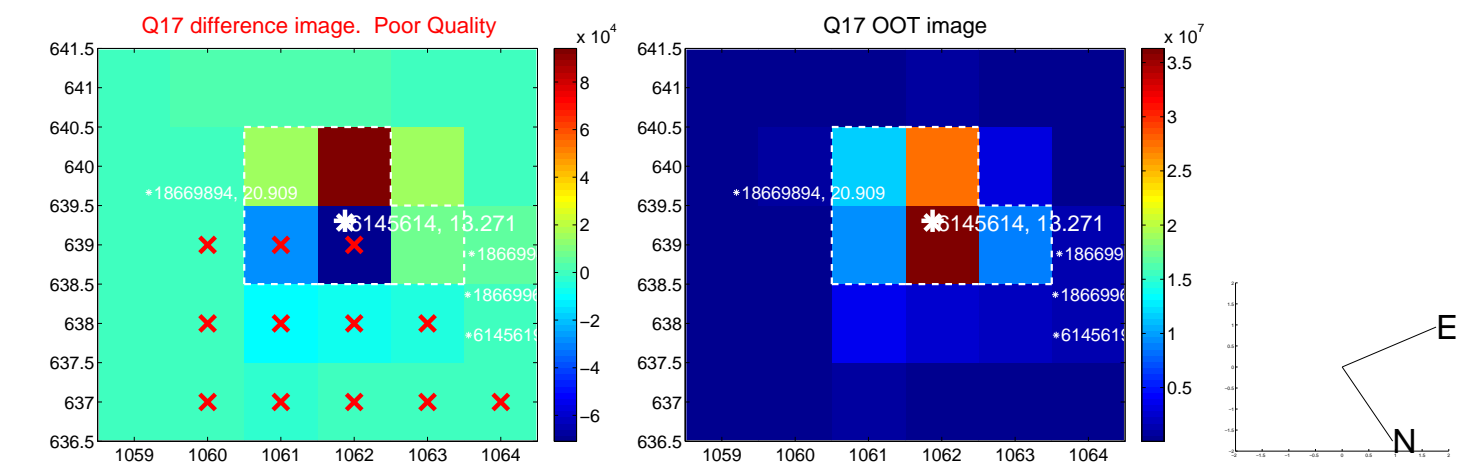
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

