

KIC 003446471

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})
003446471-01	OBS	No	1.032043	132.335455	442.4	6.943	10.2	13.6	3.52	7340	9.09	48896.10
003446471-02	OBS	No	0.746716	131.695923	1881.9	1.178	12.5	18.9	3.52	7340	15.69	75277.38
003446471-03	OBS	No	25.762100	143.172884	8121.5	1.362	8.8	9.2	3.52	7340	56.94	670.24
003446471-04	OBS	No	32.665761	146.287867	4836.2	1.711	8.2	8.8	3.52	7340	26.33	488.37
003446471-05	OBS	No	49.048118	145.173786	5492.5	1.655	7.7	8.6	3.52	7340	28.02	284.04
003446471-06	OBS	No	31.954637	143.557285	3468.9	2.615	7.7	7.1	3.52	7340	21.27	502.91

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003446471-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT
003446471-02	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT
003446471-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
003446471-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
003446471-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
003446471-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_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.

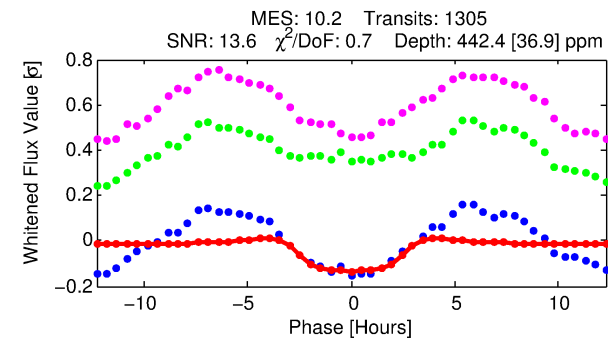
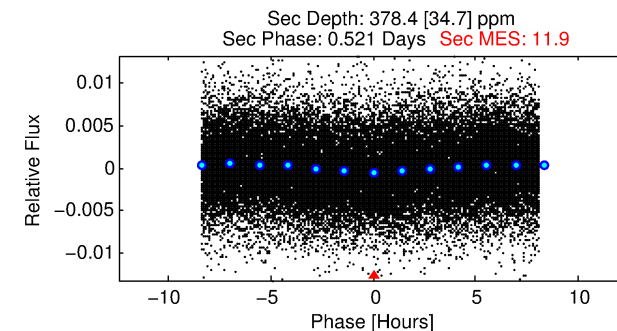
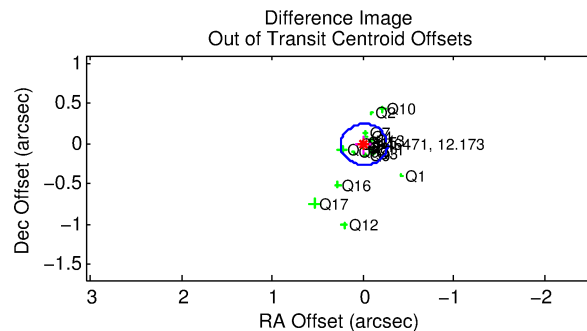
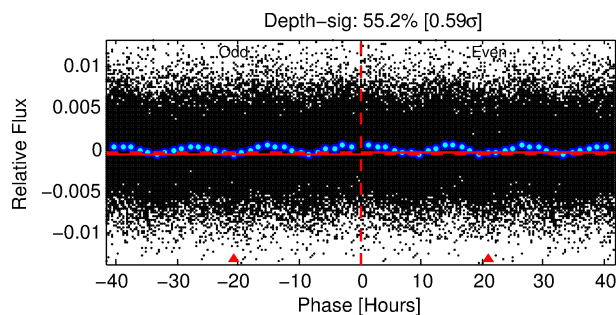
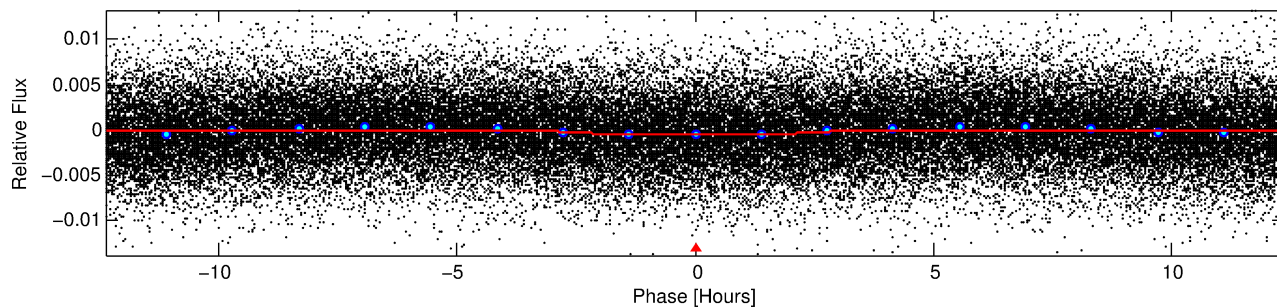
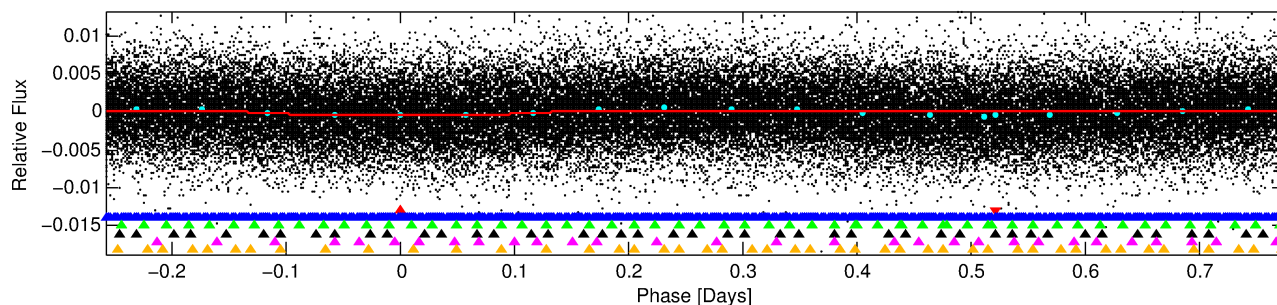
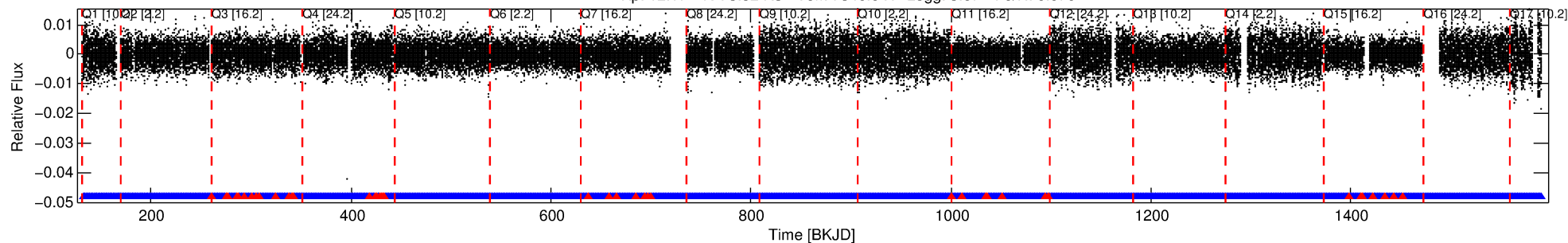
Ephemeris Match Information For 003446471-01

No Significant Match Found

DV One-Page Summary

KIC: 3446471 Candidate: 1 of 6 Period: 1.032 d

Kp: 12.17 R*: 3.52 Rs Teff: 7340.0 K Logg: 3.67 Fe/H: 0.070



DV Fit Results:

Period = 1.03204 [0.00001] d
Epoch = 132.3355 [0.0069] BKJD
Rp/R* = 0.0237 [0.0013]
a/R* = 1.07 [0.03]
b = 0.95 [0.02]
Seff = 48896.10 [38513.39]
Teq = 3792 [747] K
Rp = 9.09 [4.55] Re
a = 0.0257 [0.0123] AU
Ag = 1.66 [1.30] [0.51σ]
Teff = 6656 [386] K [3.41σ]

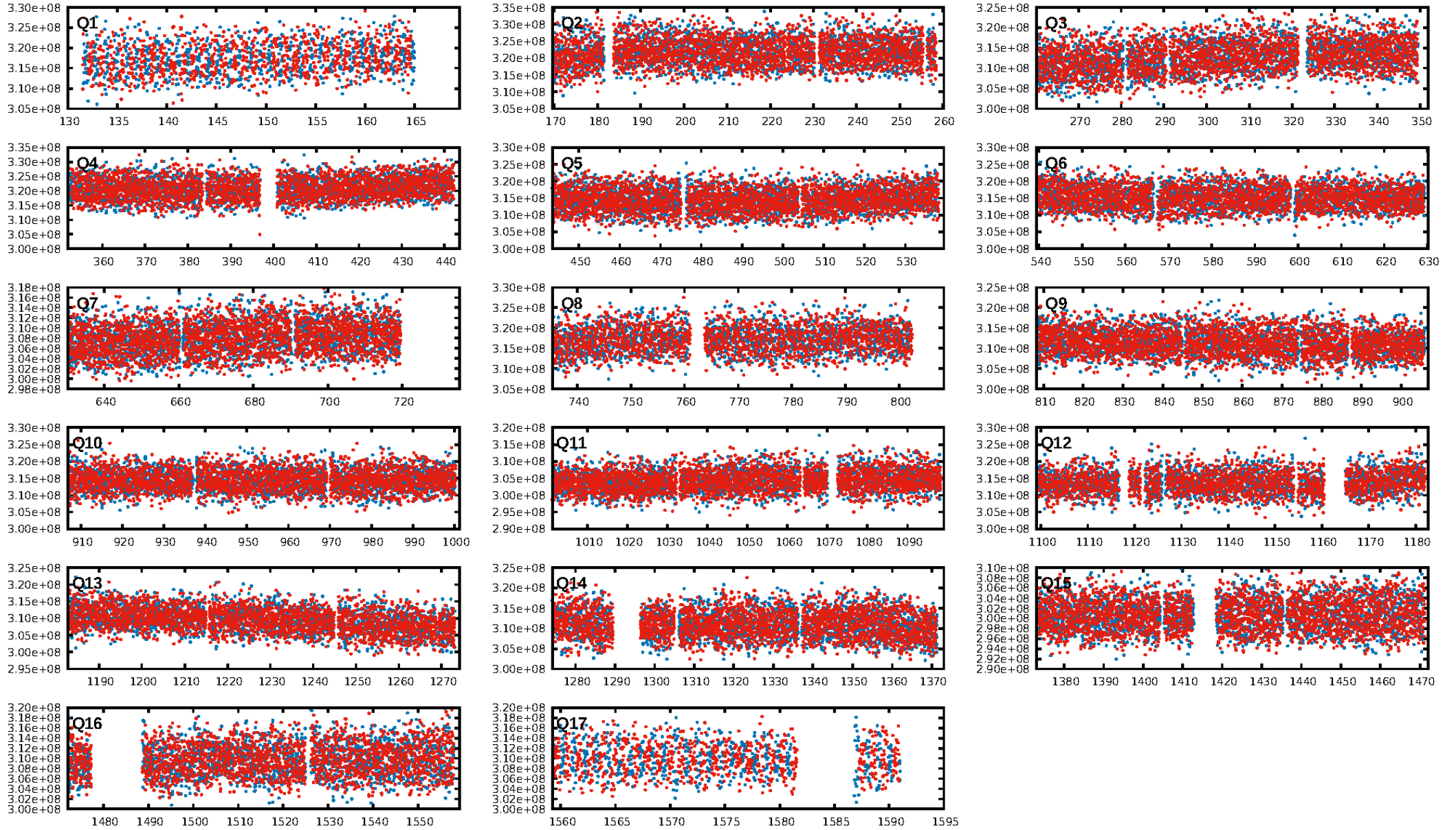
DV Diagnostic Results:

ShortPeriod-sig: 66.9% [0.97σ]
LongPeriod-sig: 100.0% [83.89σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 2.43e-15
RollingBand-fgt: 0.96 [1202/1247]
GhostDiagnostic-chr: 0.7553
Centroid-sig: 0.0%
Centroid-so: 0.174 arcsec [4.31σ]
OotOffset-rm: 0.017 arcsec [0.20σ]
KicOffset-rm: 0.038 arcsec [0.47σ]
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]

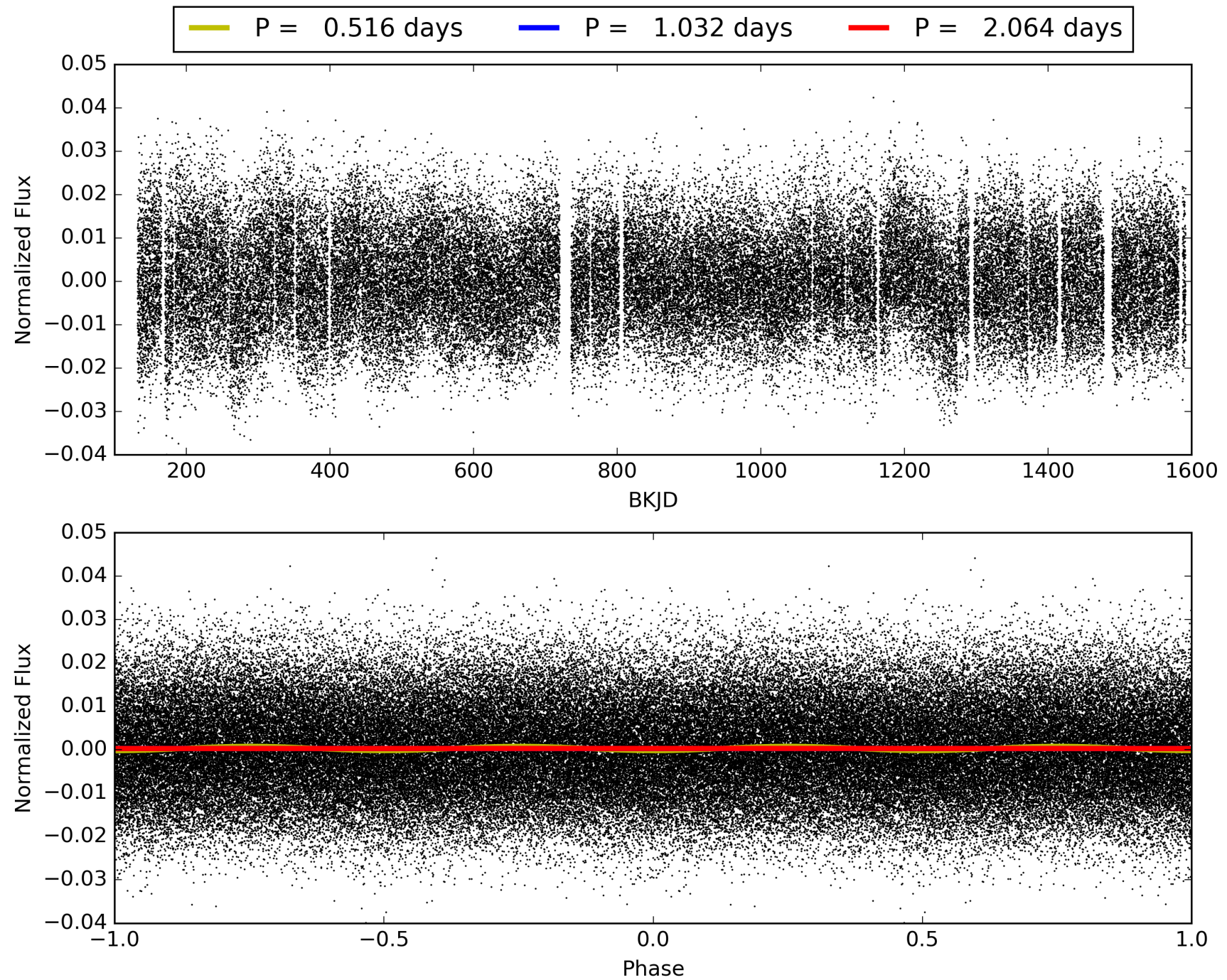
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 06:34:12 Z

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

TCE 003446471-01, PDC Light Curves

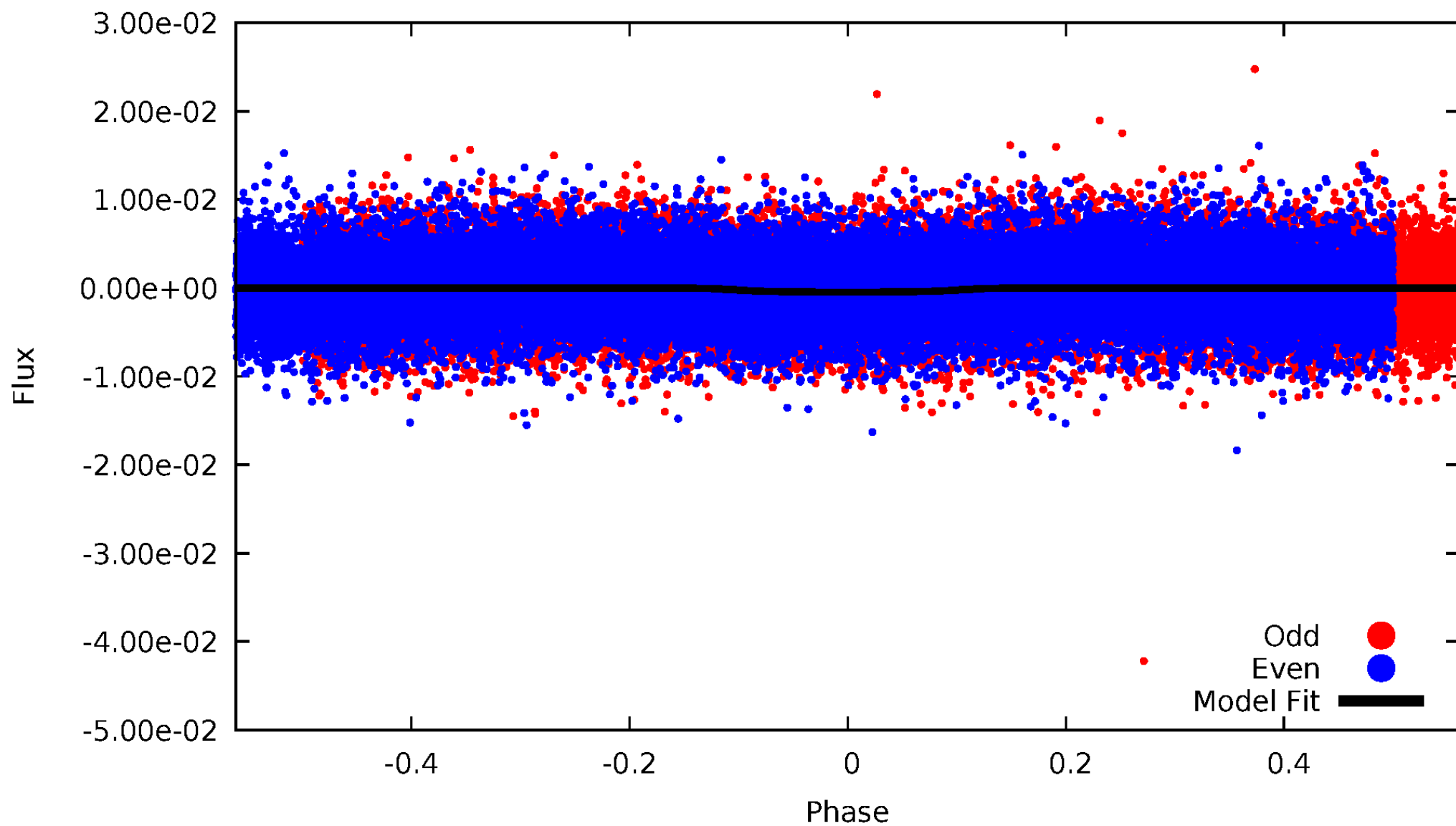


TCE 003446471-01



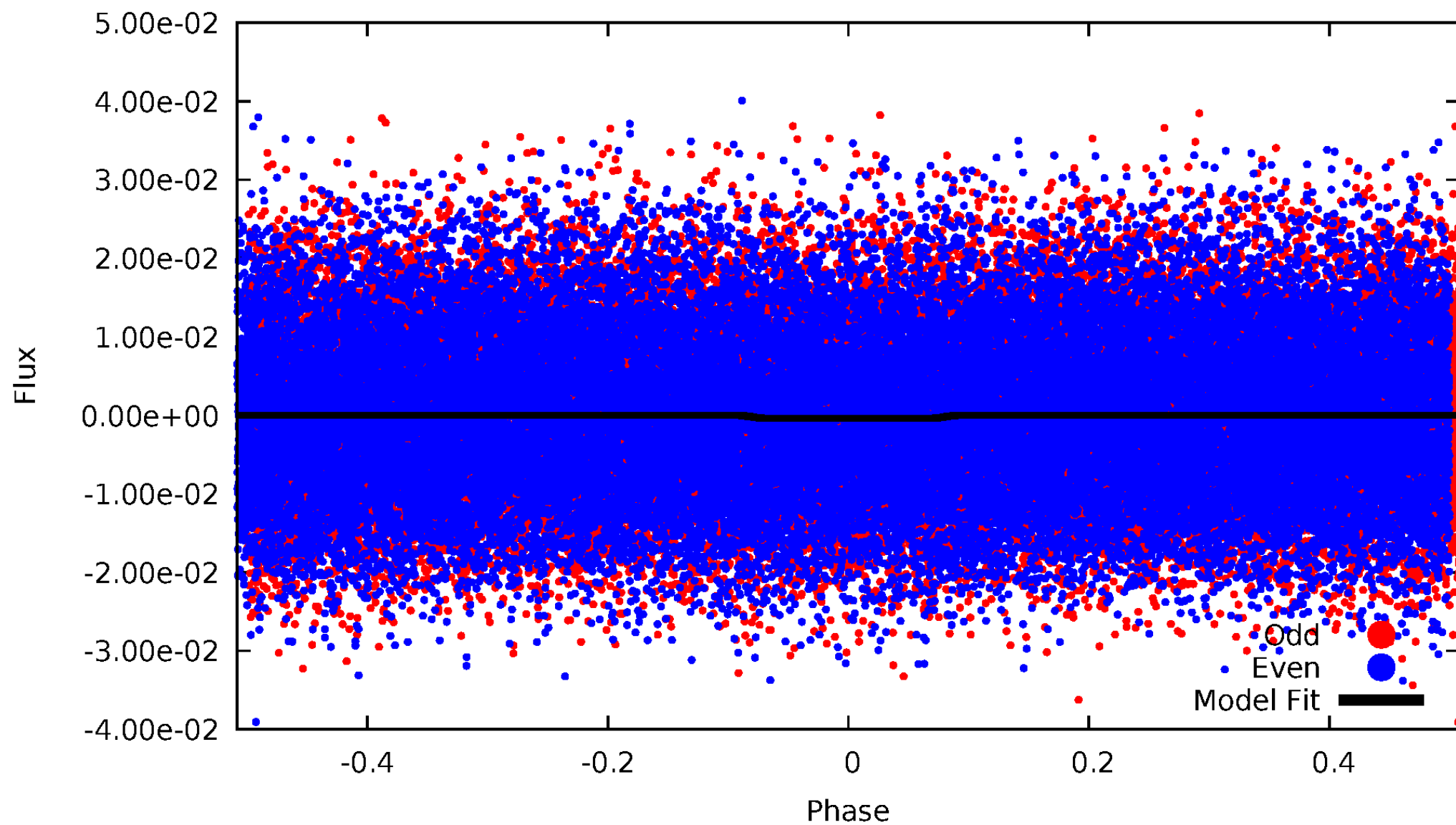
DV Odd/Even

TCE 003446471-01



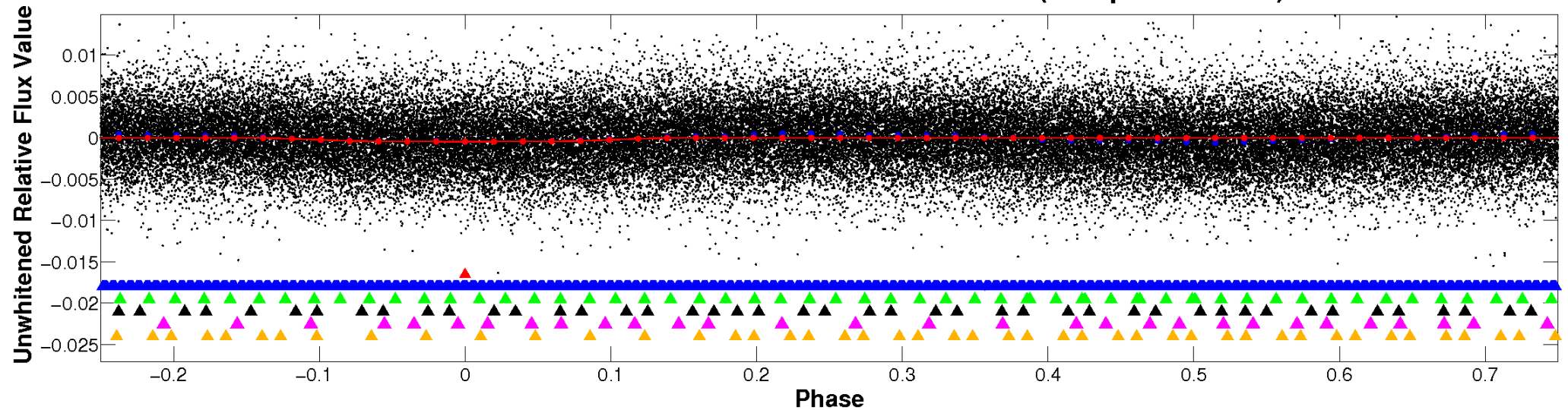
ALT Odd/Even

TCE 003446471-01

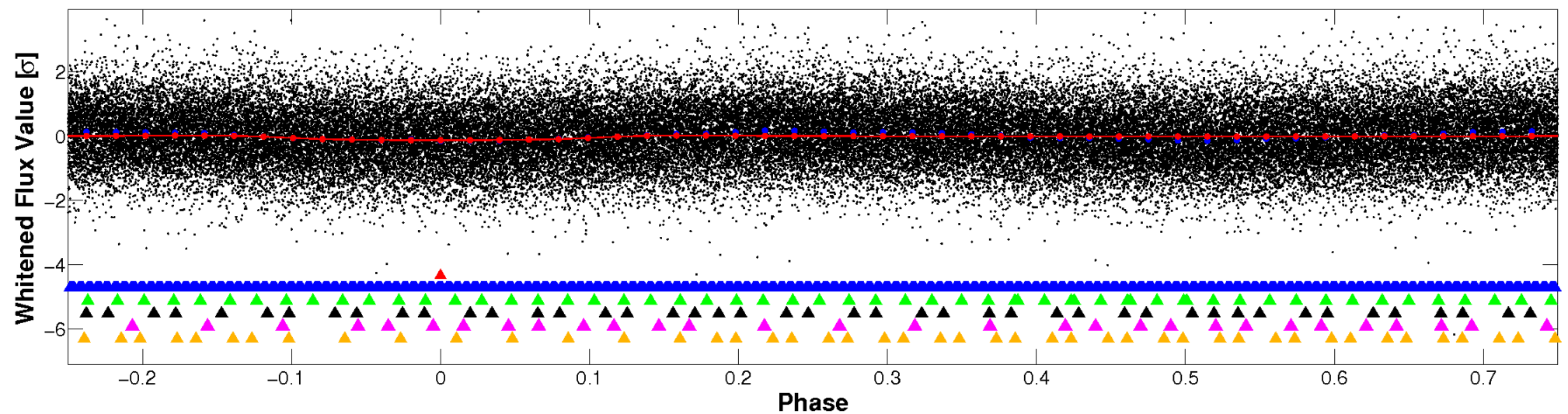


Non-Whitened Vs. Whitened Light Curve

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

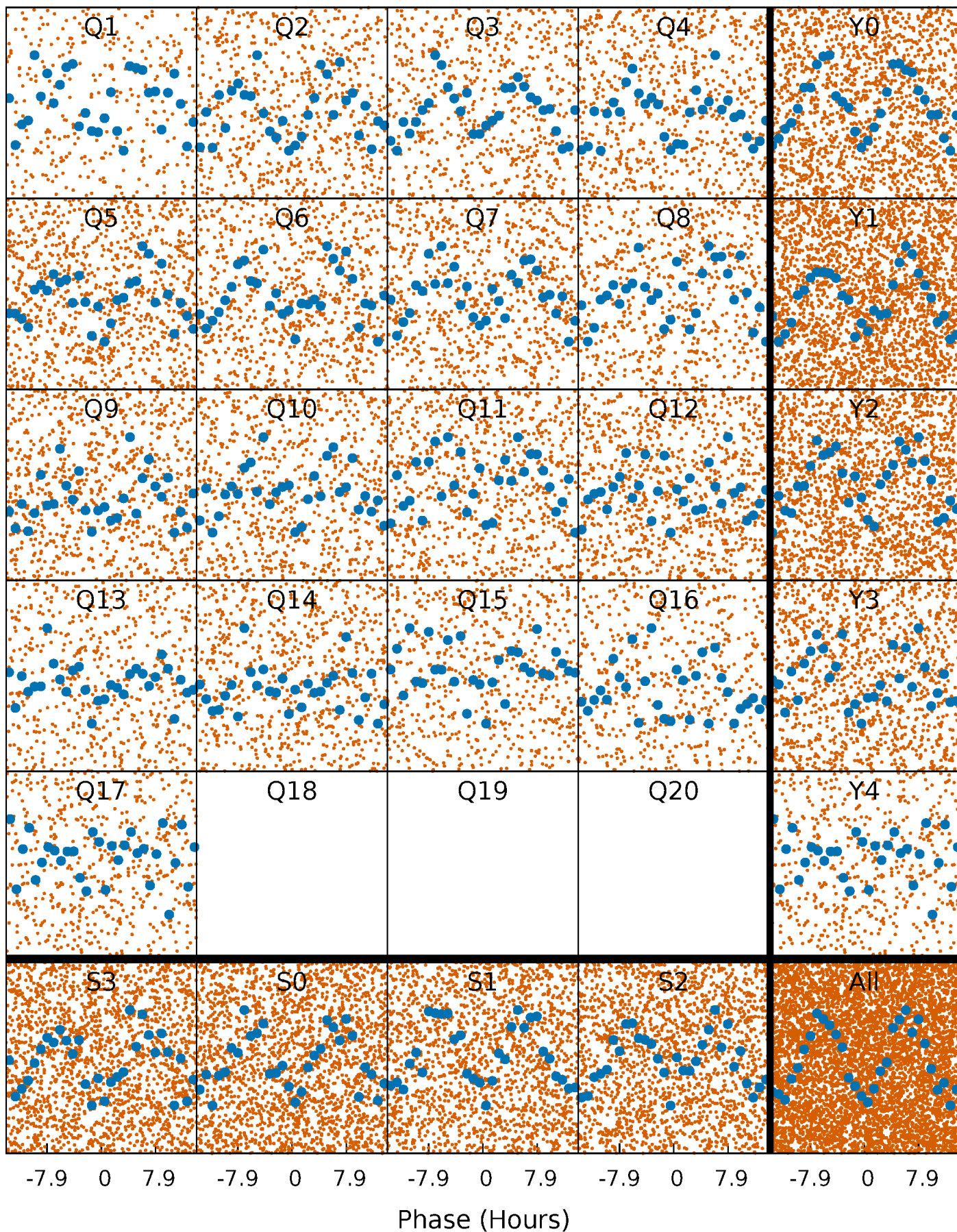


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



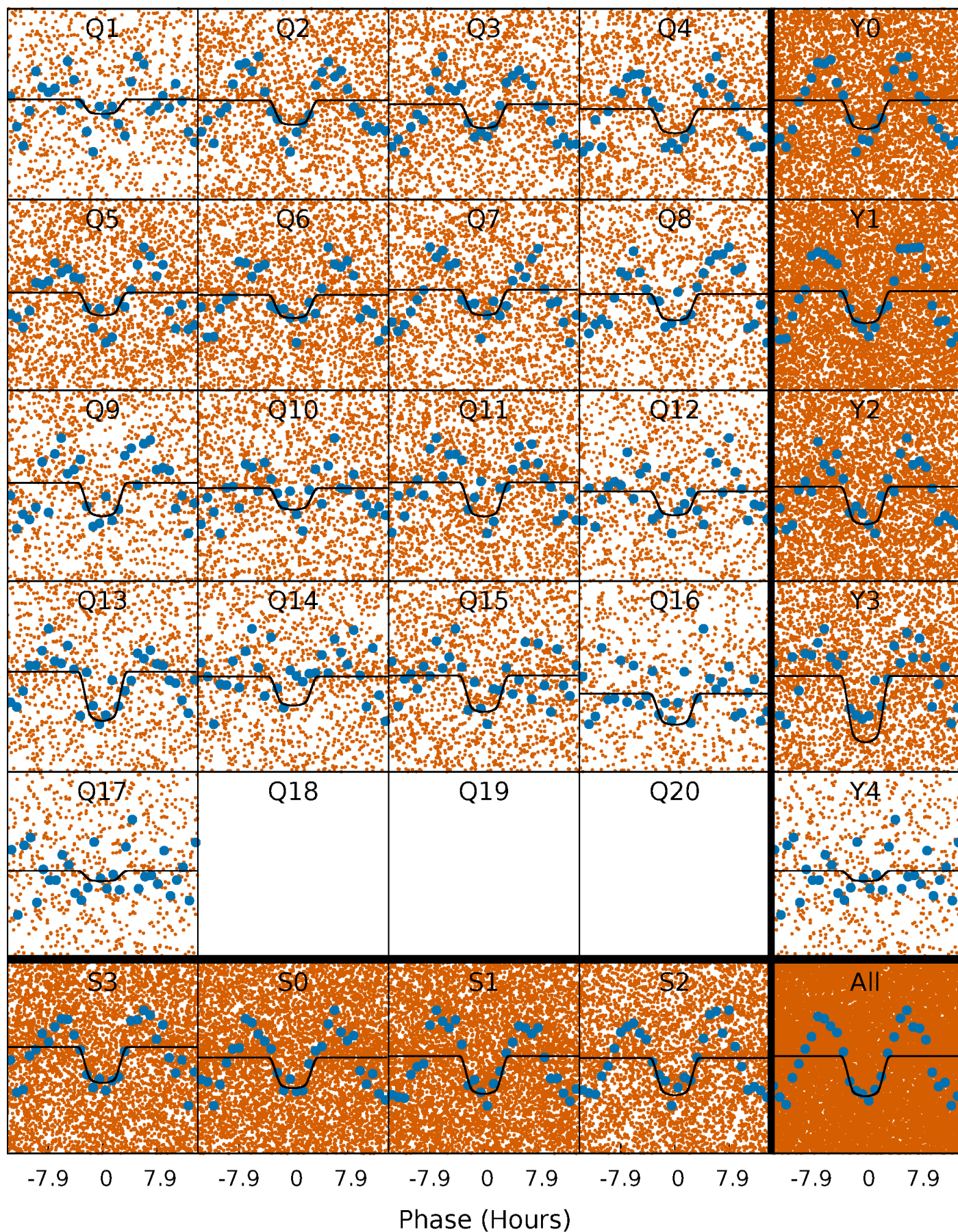
PDC Quarter-Phased Transit Curves

TCE 003446471-01 P= 1.032043 Days $T_0=132.335455$ (BKJD)



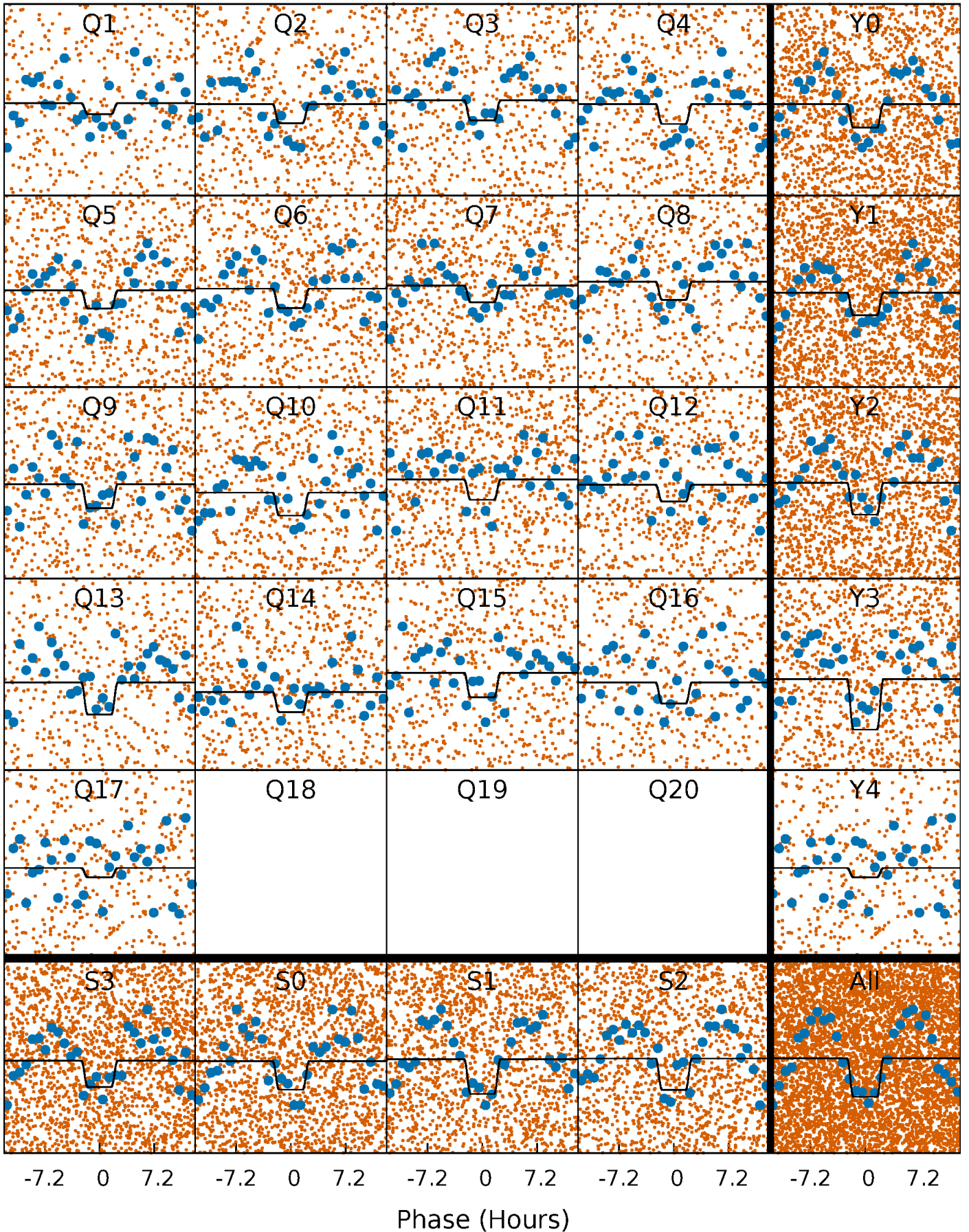
DV Quarter-Phased Transit Curves

TCE 003446471-01 P= 1.032043 Days $T_0=132.335455$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

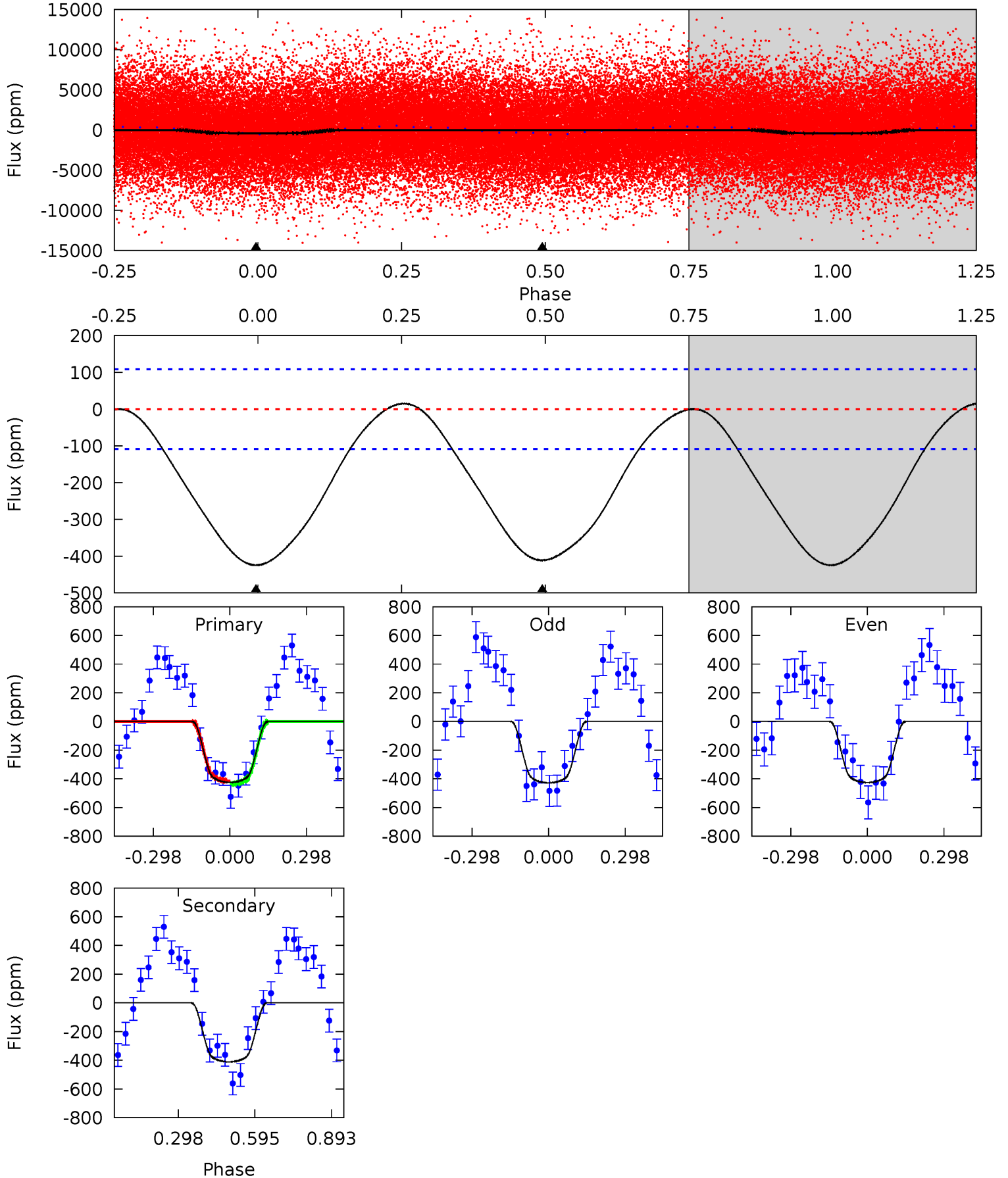
TCE 003446471-01 P= 1.032051 Days $T_0=132.331379$ (BKJD)



DV Model-Shift Uniqueness Test

003446471-01, P = 1.032043 Days, E = 131.303412 Days

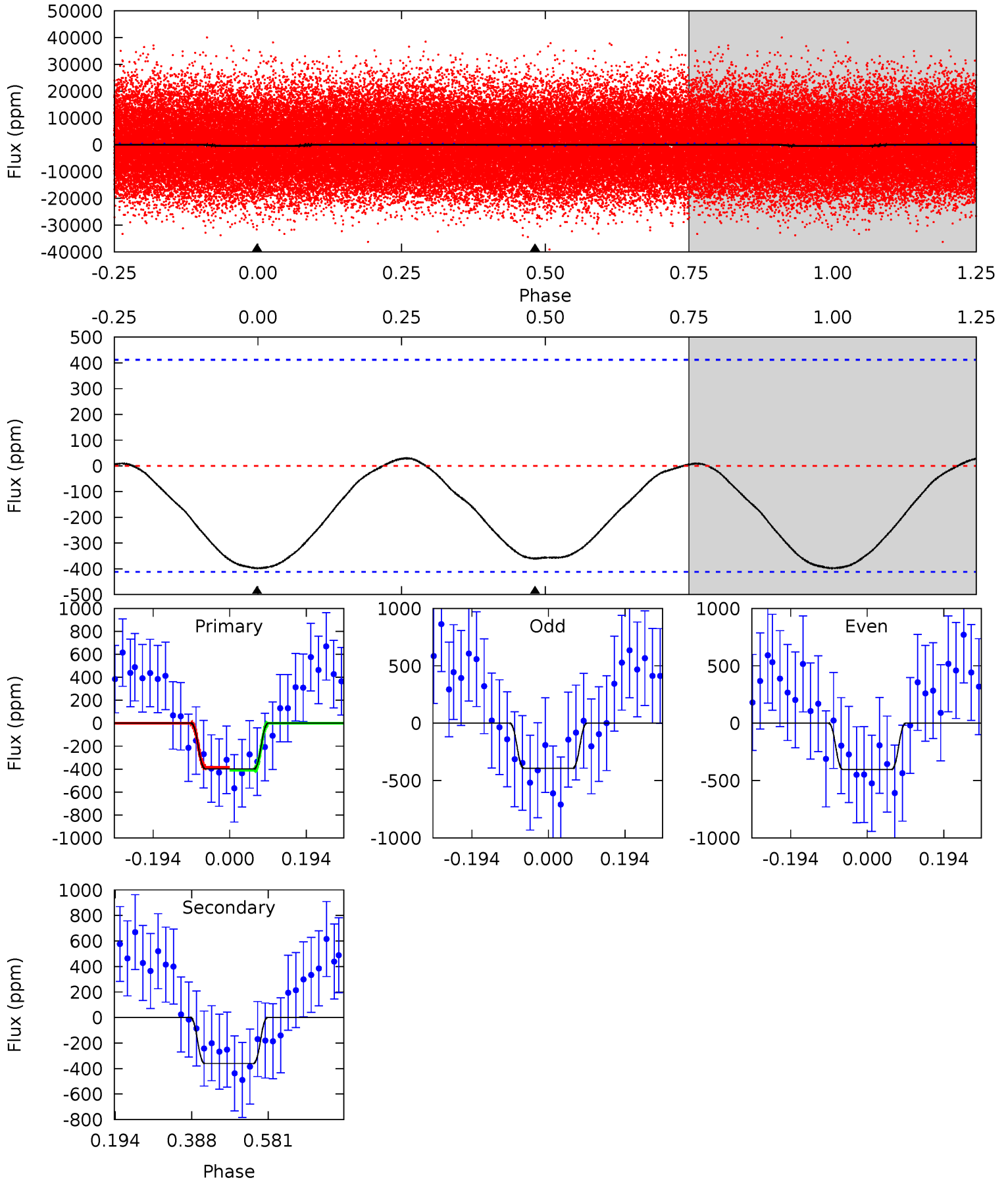
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.9	16.4	0	0	4.33	1.04	0.39	16.9	16.9	16.4	16.4	0.05	1.01	0.03	0.41



Alt Model-Shift Uniqueness Test

003446471-01, P = 1.032051 Days, E = 131.299328 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.27	3.86	0	0	4.42	1.30	0.24	4.27	4.27	3.86	3.86	0.05	1.15	0.07	0.14



Stellar Parameters For KIC 003446471

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	7340^{+205}_{-334}	$3.671^{+0.450}_{-0.075}$	$0.070^{+0.200}_{-0.300}$	$3.522^{+0.412}_{-1.753}$	$2.123^{+0.244}_{-0.609}$	$0.068^{+0.293}_{-0.018}$
	+3%/-5%	+12%/-2%	+286%/-429%	+12%/-50%	+11%/-29%	+429%/-26%
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 003446471-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-411 ± 25	$8.76^{+1.10}_{-2.23}$	5137^{+337}_{-638}	6432^{+344}_{-334}	$2.002^{+1.318}_{-0.432}$
Alt.	-360 ± 93	$7.71^{+0.94}_{-1.95}$	5137^{+308}_{-576}	6694^{+632}_{-623}	$2.329^{+1.513}_{-0.721}$

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

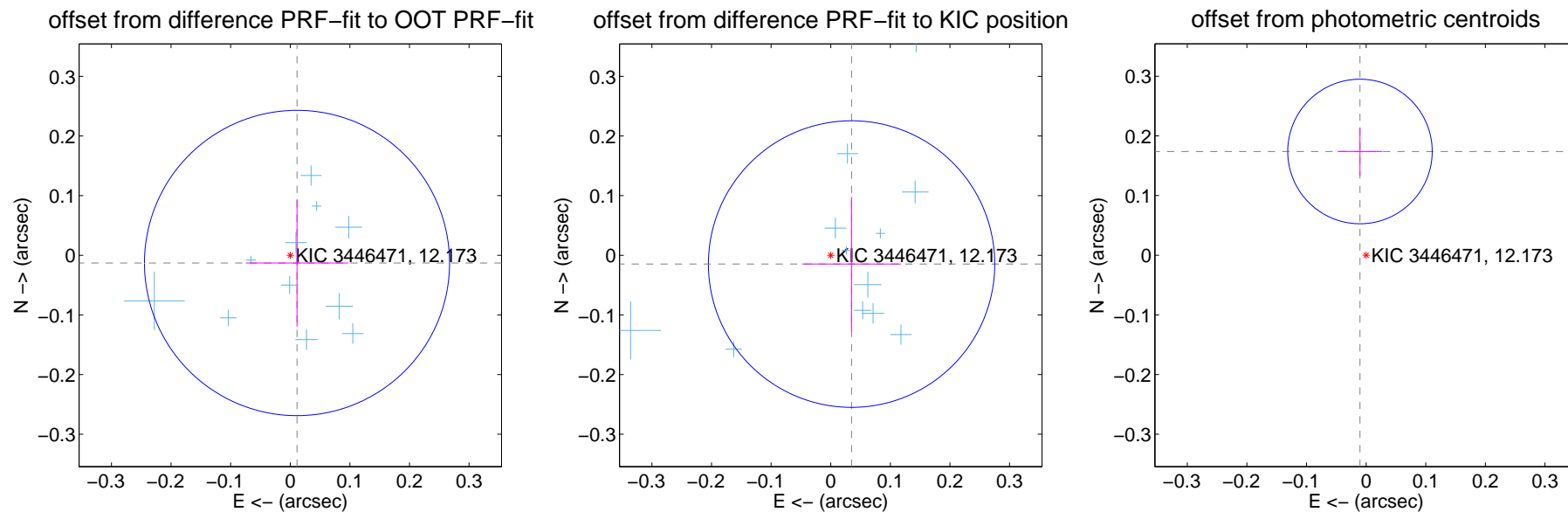
DV Centroid Data

Supplemental centroid analysis for 003446471-01. Kepler magnitude: 12.17. Transit SNR 13.57

There are 16 quarters with good PRF difference image offsets

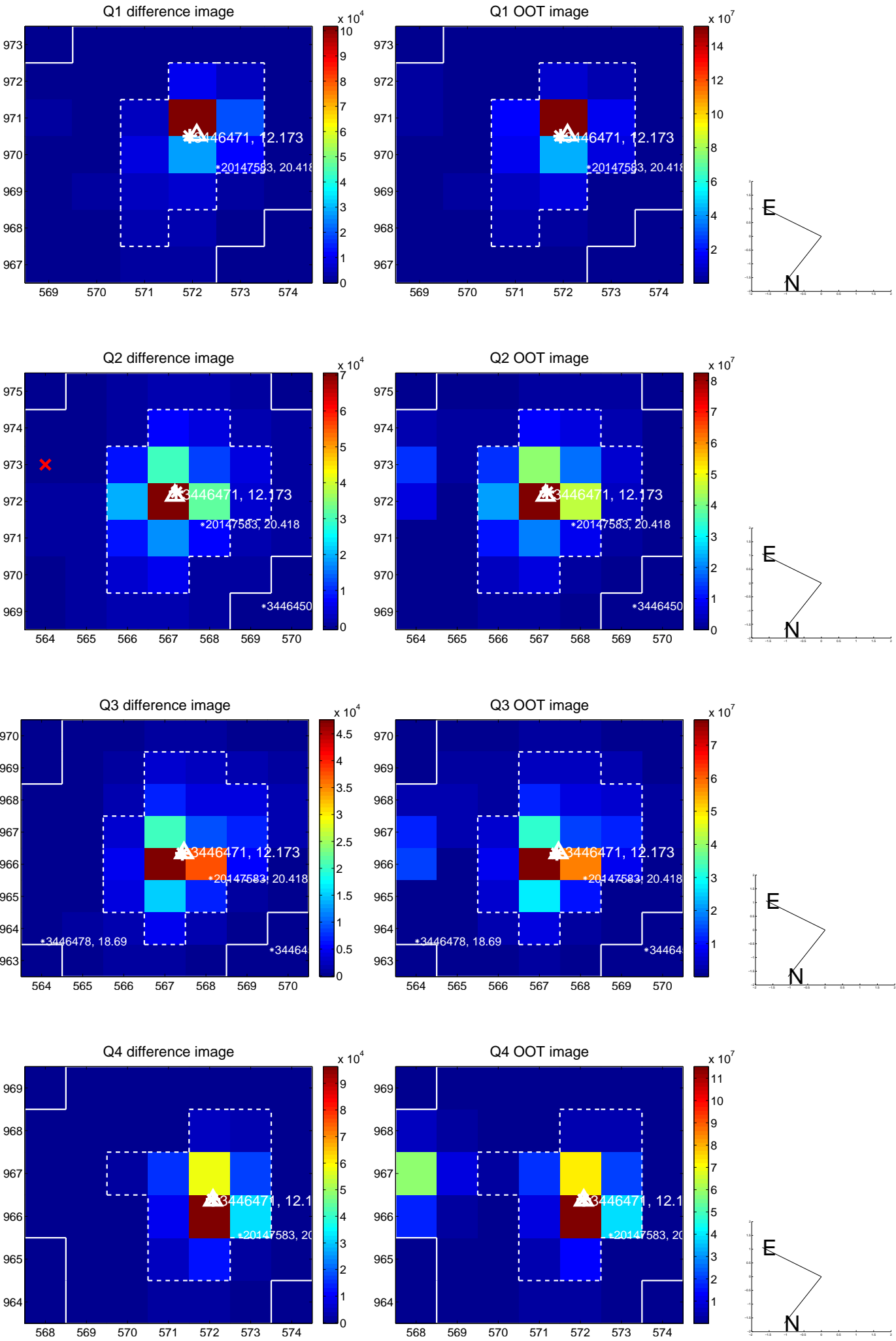
The direct PRF centroid is offset from the target star catalog position by about 0.03 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.017 ± 0.085	0.20	-0.011 ± 0.086	-0.013 ± 0.107
PRF-fit source offset from KIC position	0.038 ± 0.080	0.47	-0.035 ± 0.083	-0.015 ± 0.112
photometric centroid source offset	0.17 ± 0.04	4.31	0.01 ± 0.04	0.17 ± 0.04

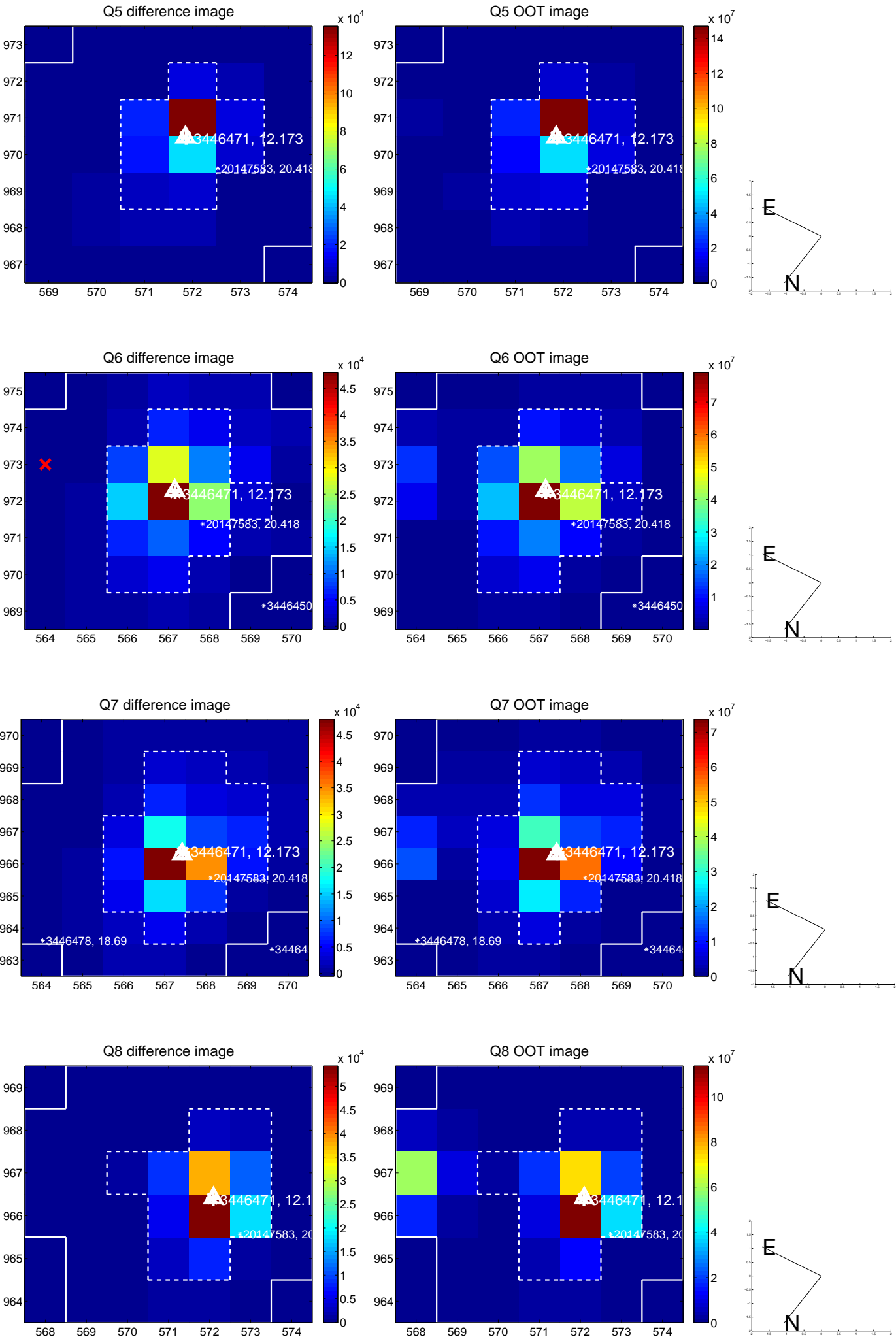


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

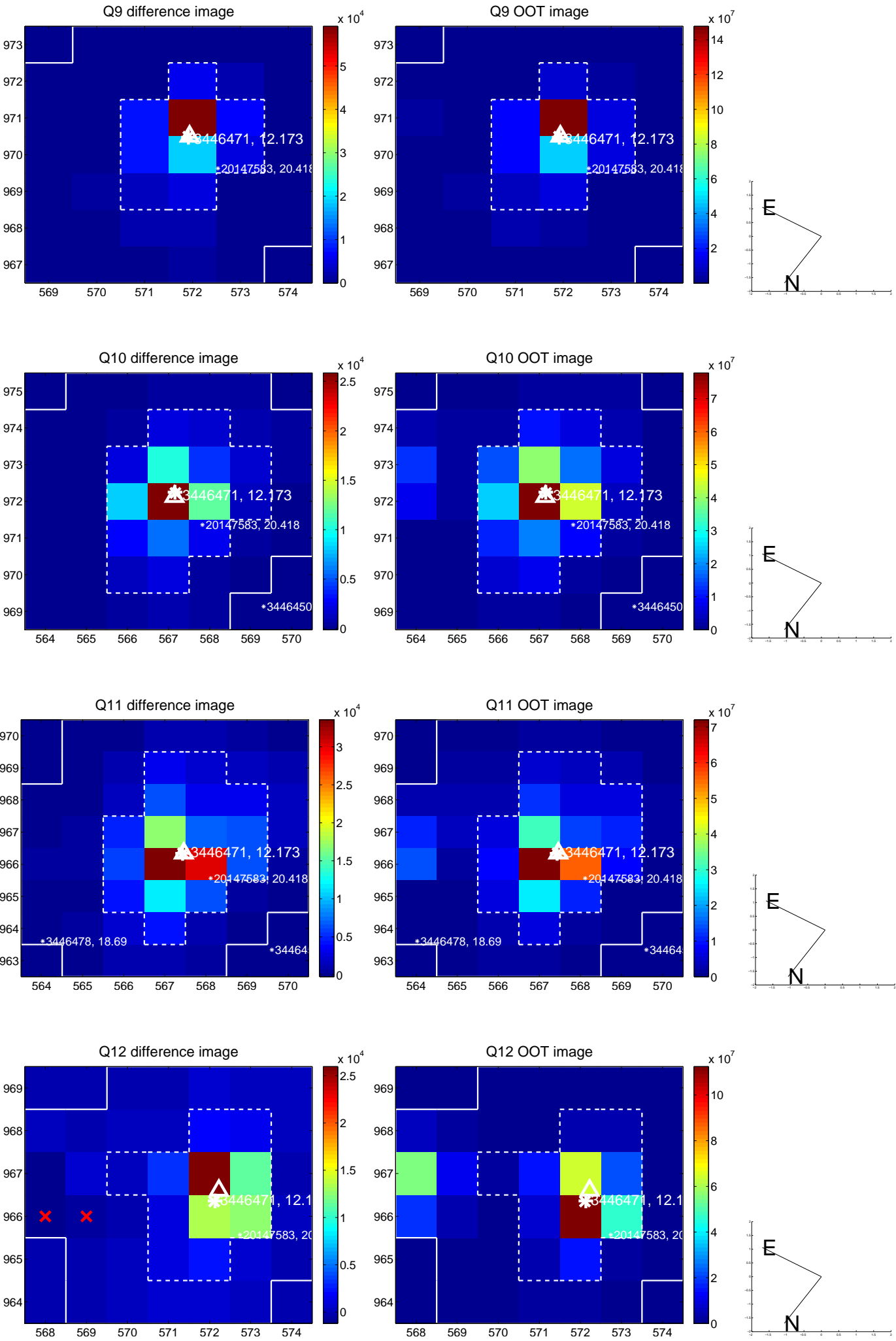
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



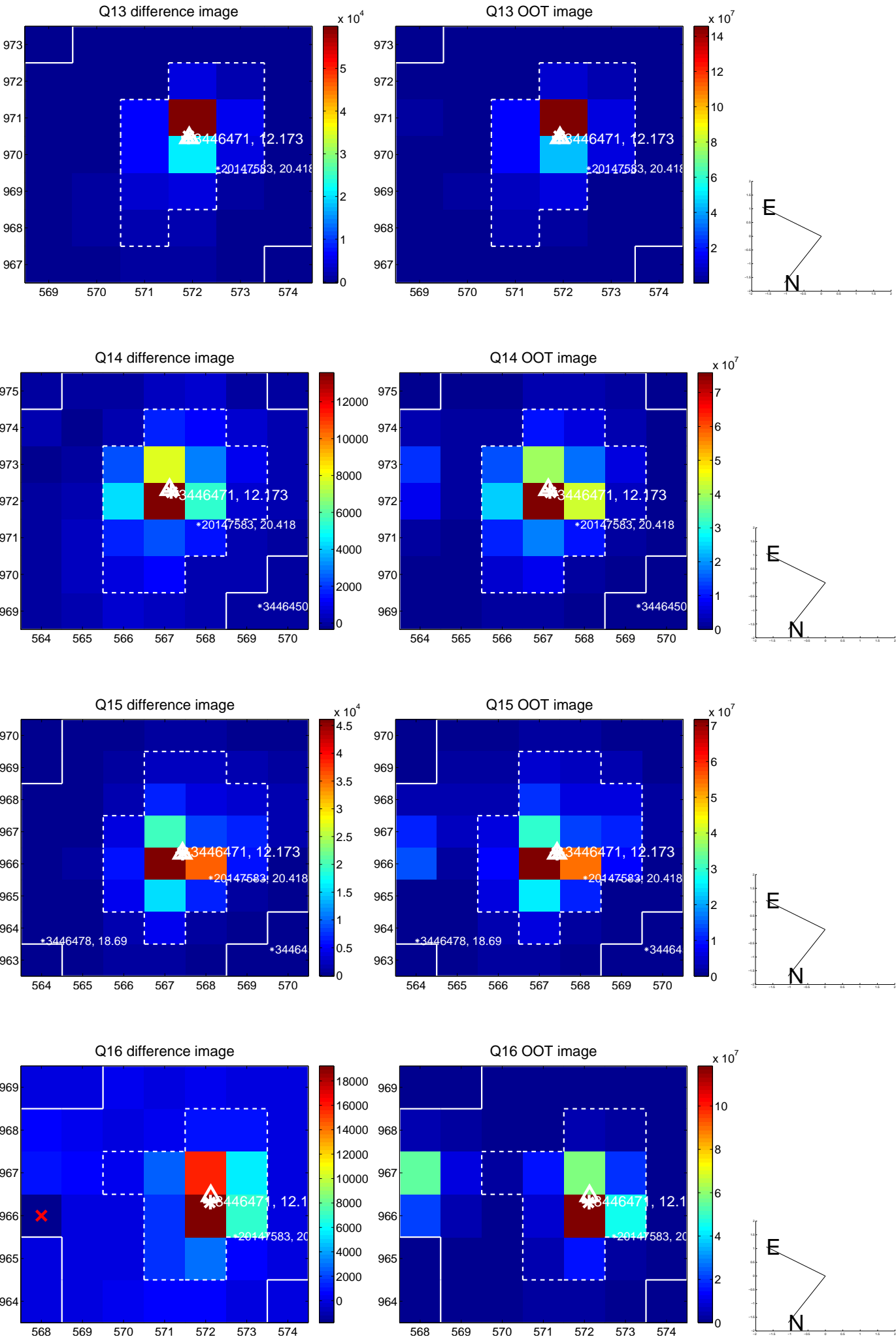
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



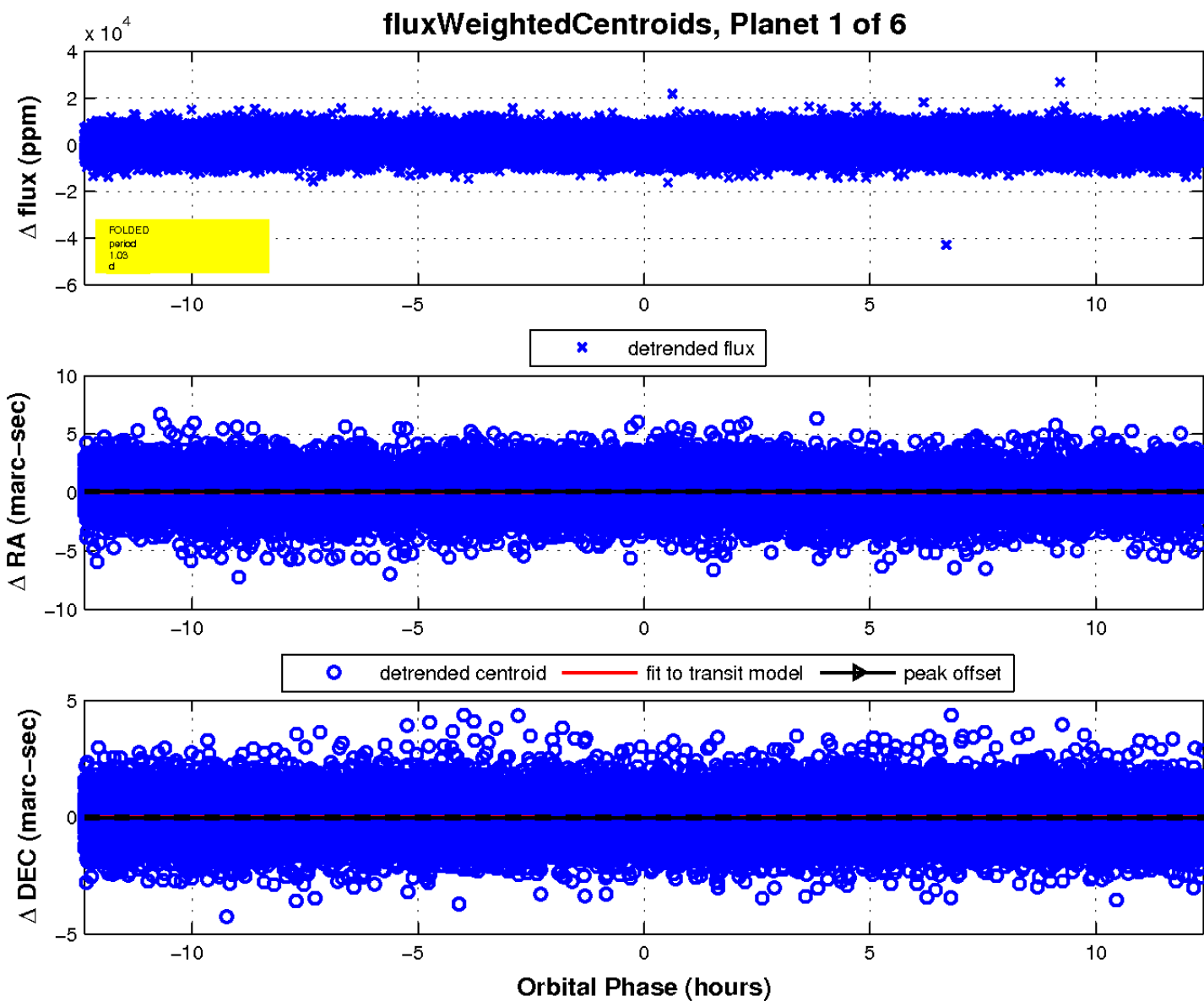
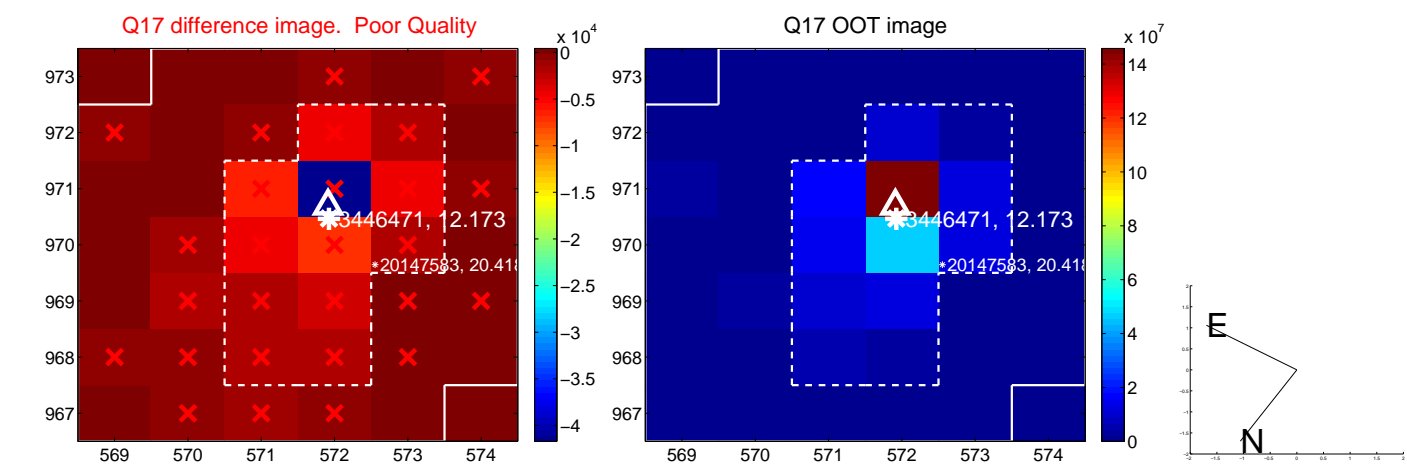
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

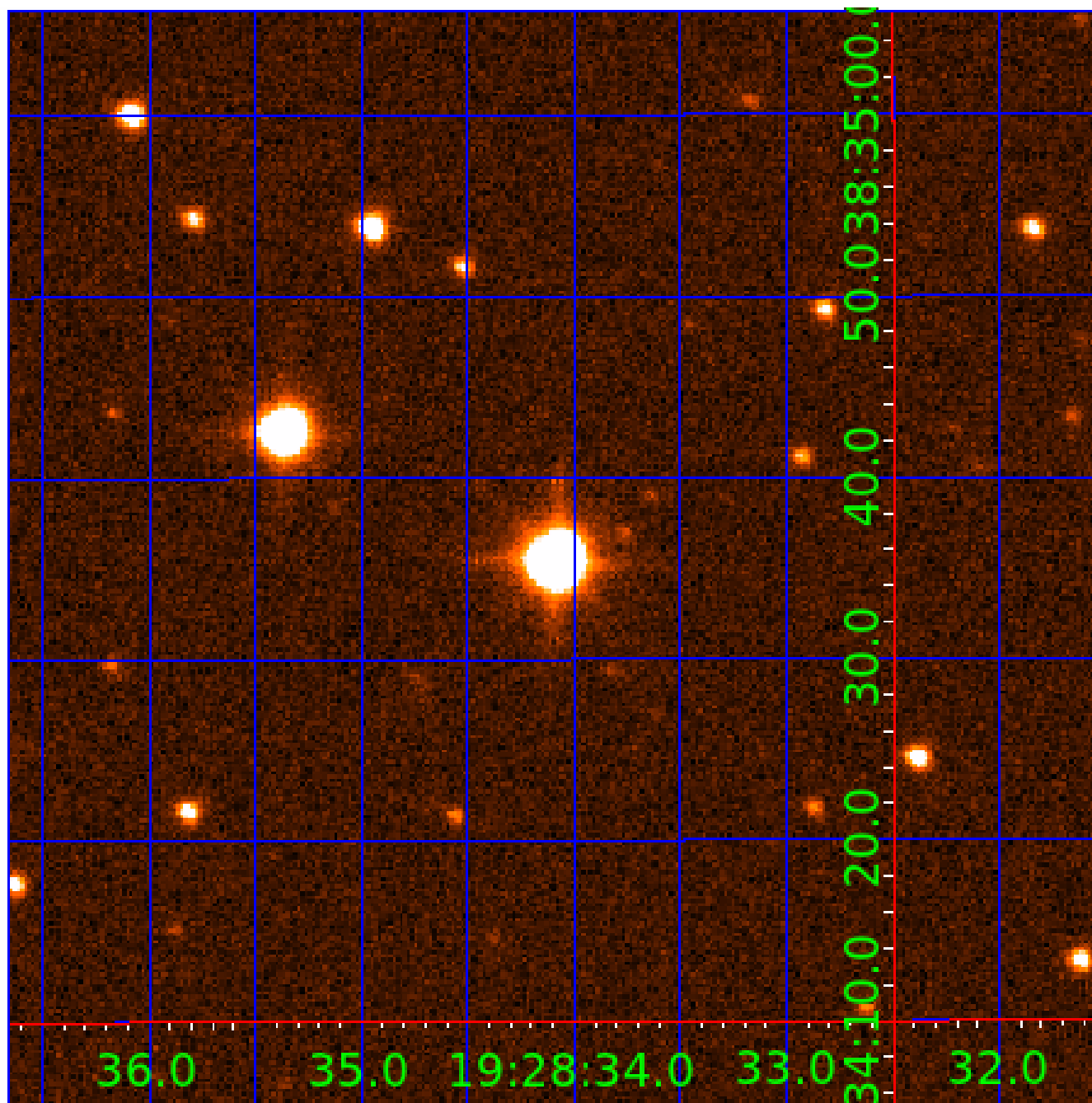


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 003446471

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})
003446471-01	OBS	No	1.032043	132.335455	442.4	6.943	10.2	13.6	3.52	7340	9.09	48896.10
003446471-02	OBS	No	0.746716	131.695923	1881.9	1.178	12.5	18.9	3.52	7340	15.69	75277.38
003446471-03	OBS	No	25.762100	143.172884	8121.5	1.362	8.8	9.2	3.52	7340	56.94	670.24
003446471-04	OBS	No	32.665761	146.287867	4836.2	1.711	8.2	8.8	3.52	7340	26.33	488.37
003446471-05	OBS	No	49.048118	145.173786	5492.5	1.655	7.7	8.6	3.52	7340	28.02	284.04
003446471-06	OBS	No	31.954637	143.557285	3468.9	2.615	7.7	7.1	3.52	7340	21.27	502.91

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003446471-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT
003446471-02	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT
003446471-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
003446471-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
003446471-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
003446471-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT

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

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

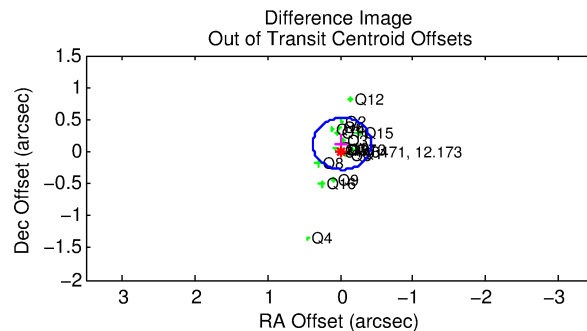
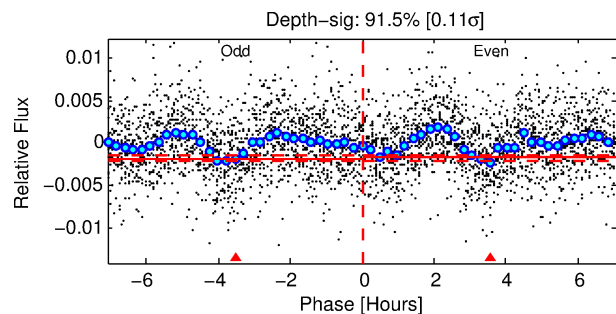
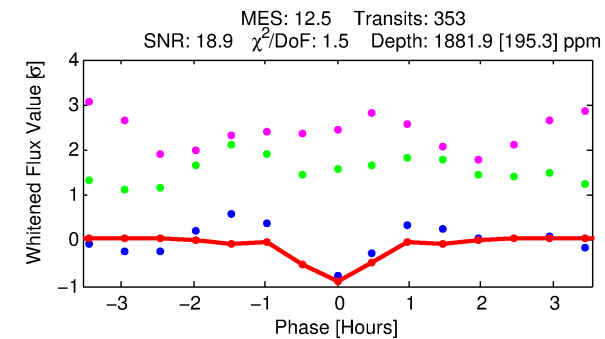
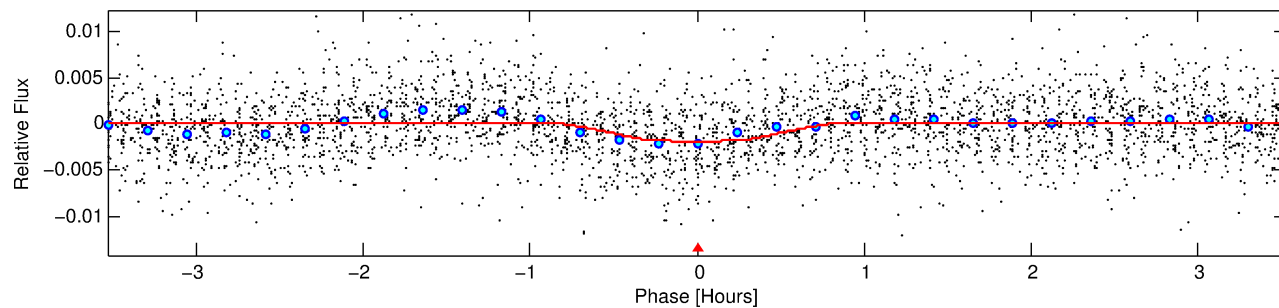
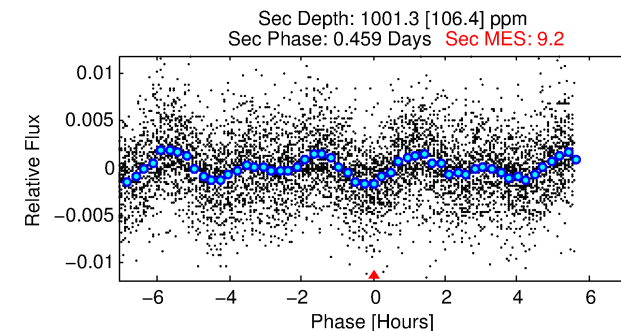
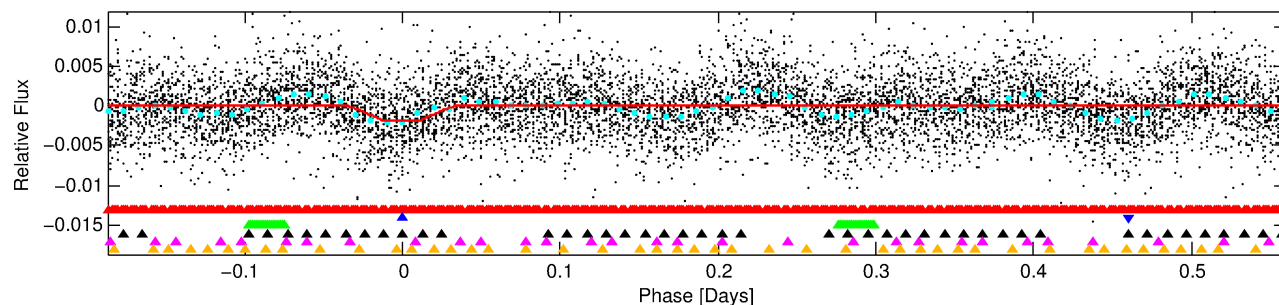
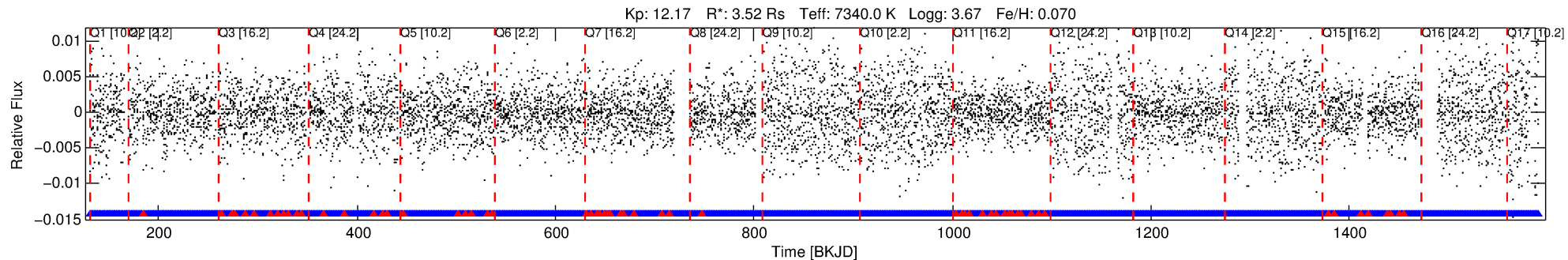
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003446471-02

No Significant Match Found

DV One-Page Summary

KIC: 3446471 Candidate: 2 of 6 Period: 0.747 d



DV Fit Results:

Period = 0.74672 [0.00001] d
Epoch = 131.6959 [0.0015] BKJD
Rp/R* = 0.0408 [0.0201]
a/R* = 4.83 [12.82]
b = 0.33 [7.63]
Seff = 75277.38 [59292.80]
Teq = 4224 [832] K
Rp = 15.69 [10.98] Re
a = 0.0207 [0.0099] AU
Ag = 0.96 [1.20] [-0.03σ]
Teffp = 6462 [1625] K [1.23σ]

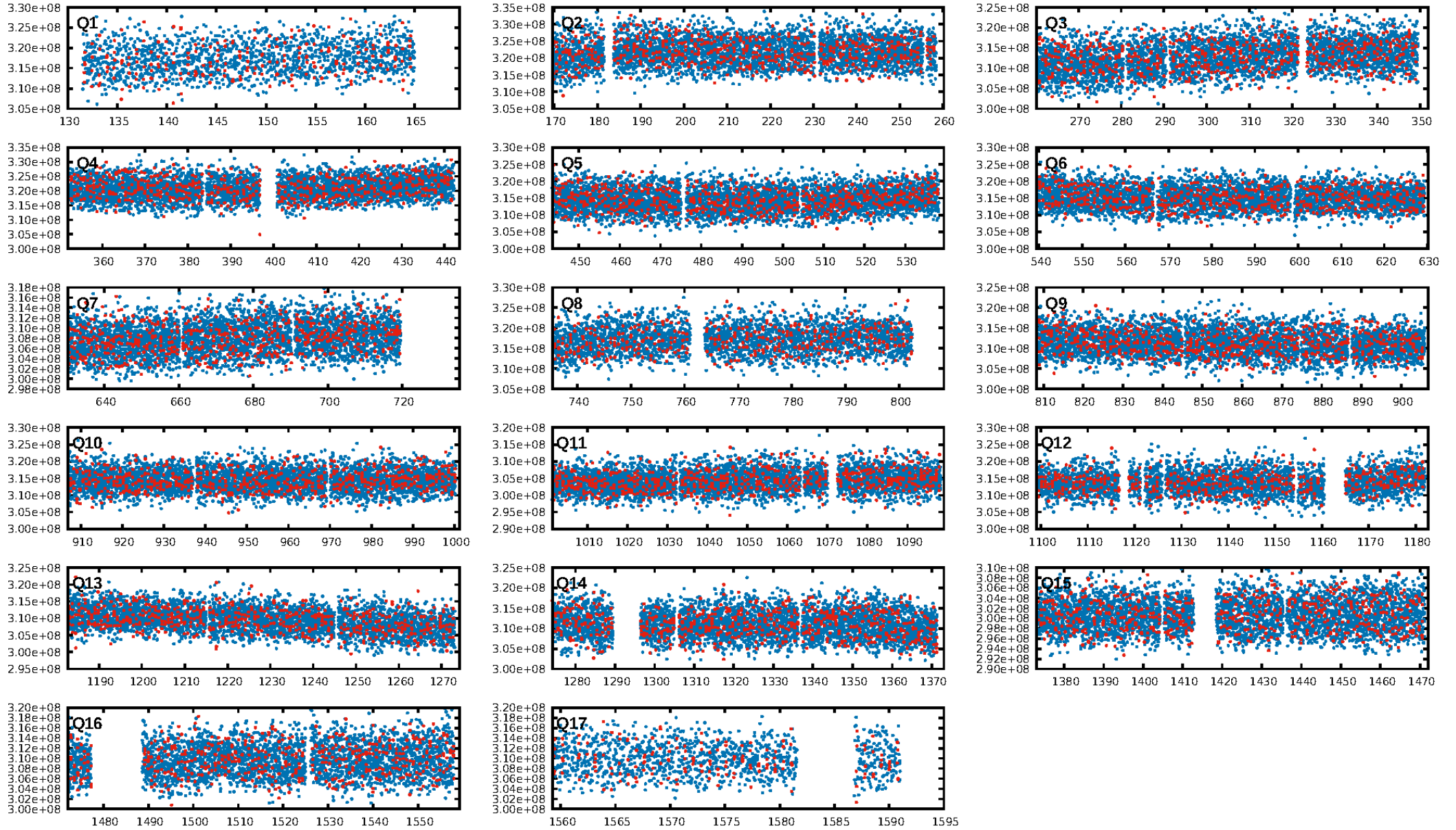
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 66.9% [0.97σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 3.40e-24
RollingBand-igt: 0.82 [278/337]
GhostDiagnostic-chr: 3.685
Centroid-sig: 42.7%
Centroid-so: 0.208 arcsec [13.27σ]
OotOffset-rm: 0.124 arcsec [0.93σ]
KicOffset-rm: 0.122 arcsec [0.92σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.82 [14/17]
DiffImageOverlap-fno: 1.00 [17/17]

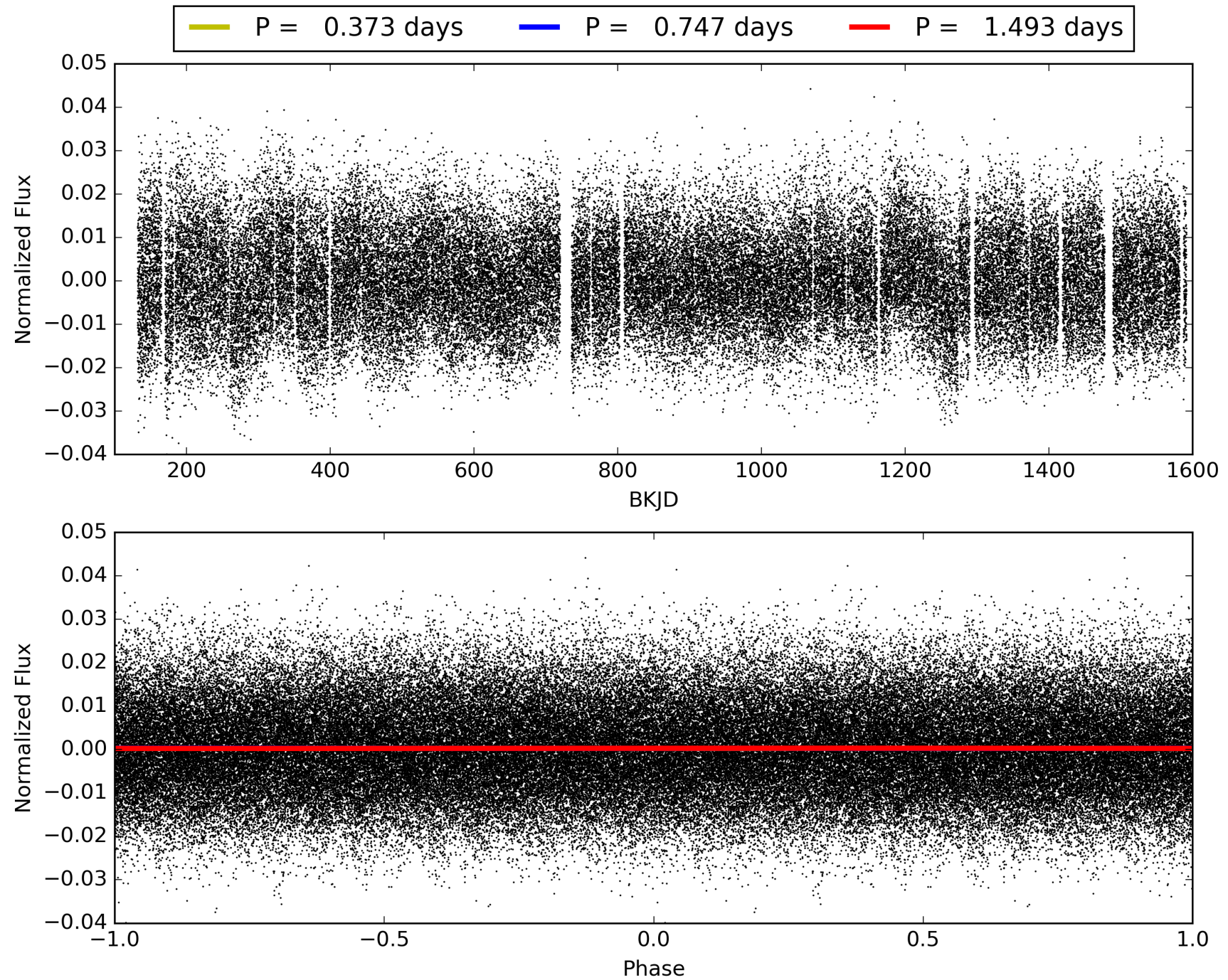
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 06:34:25 Z

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

TCE 003446471-02, PDC Light Curves

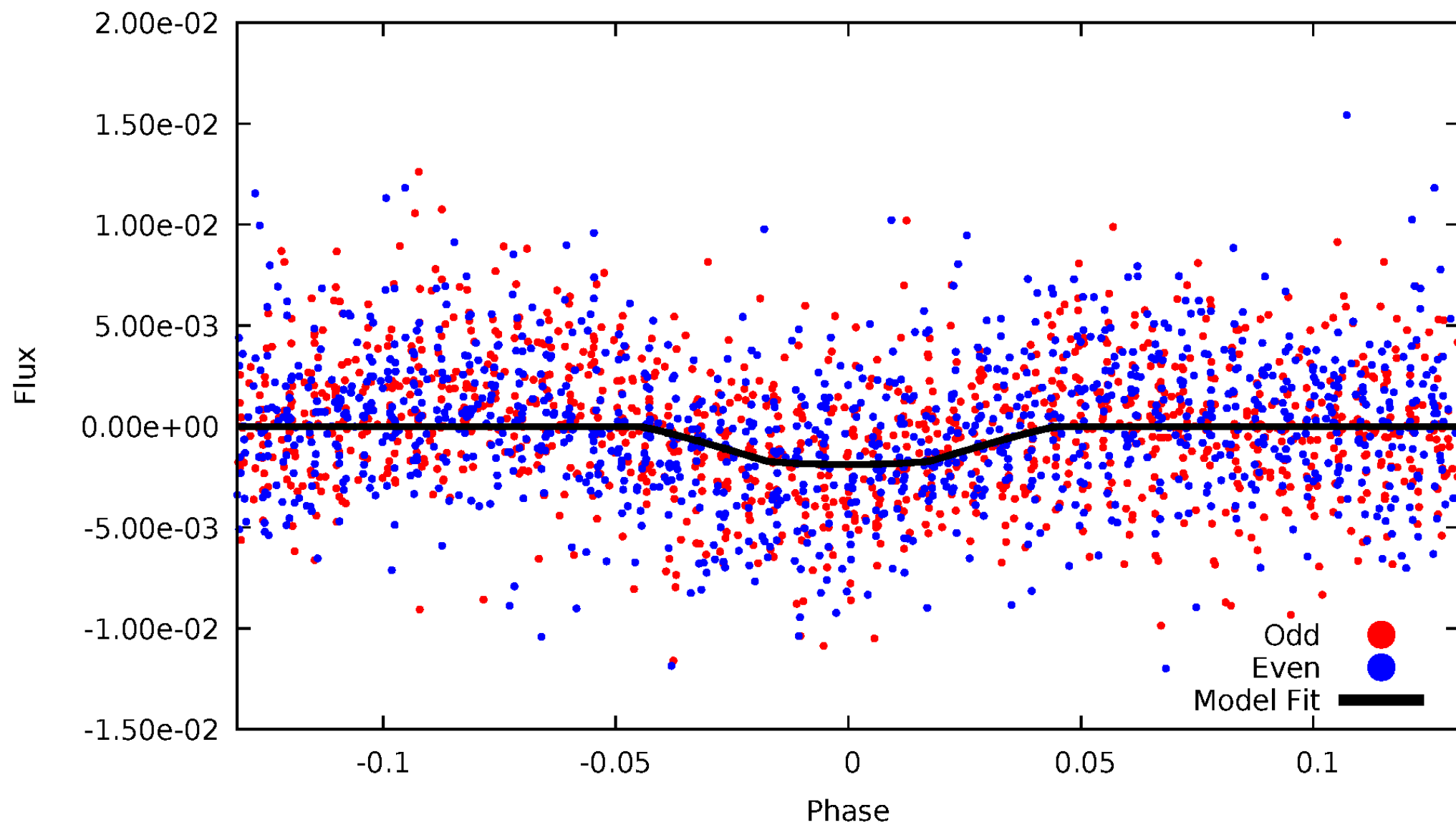


TCE 003446471-02



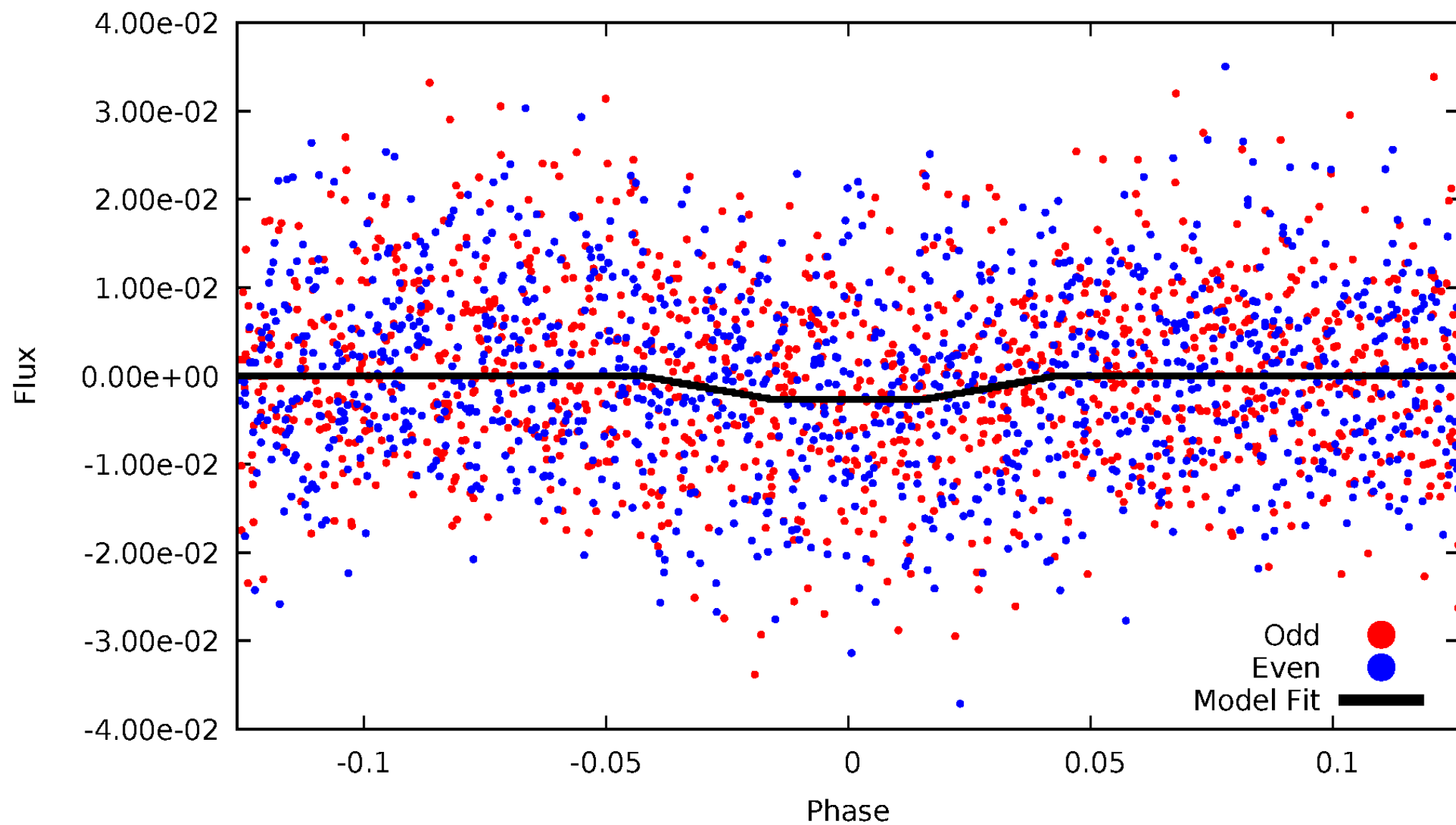
DV Odd/Even

TCE 003446471-02



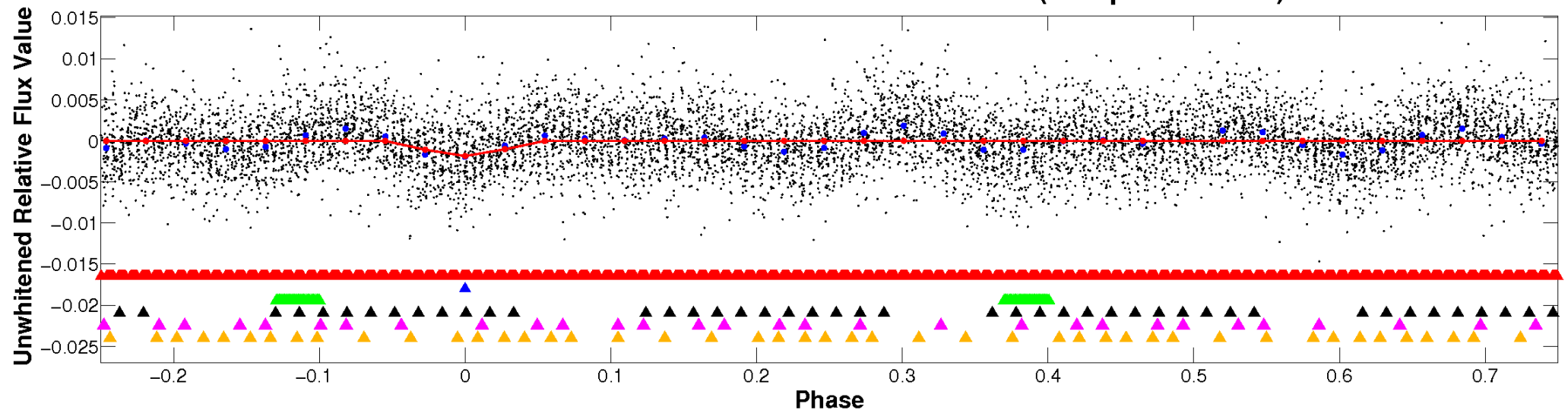
ALT Odd/Even

TCE 003446471-02

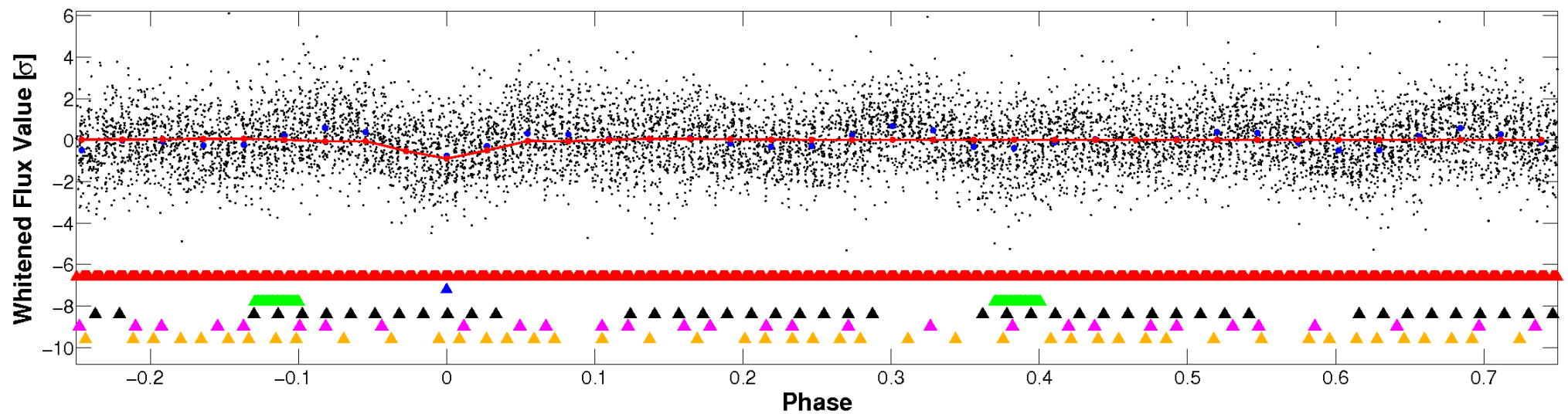


Non-Whitened Vs. Whitened Light Curve

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

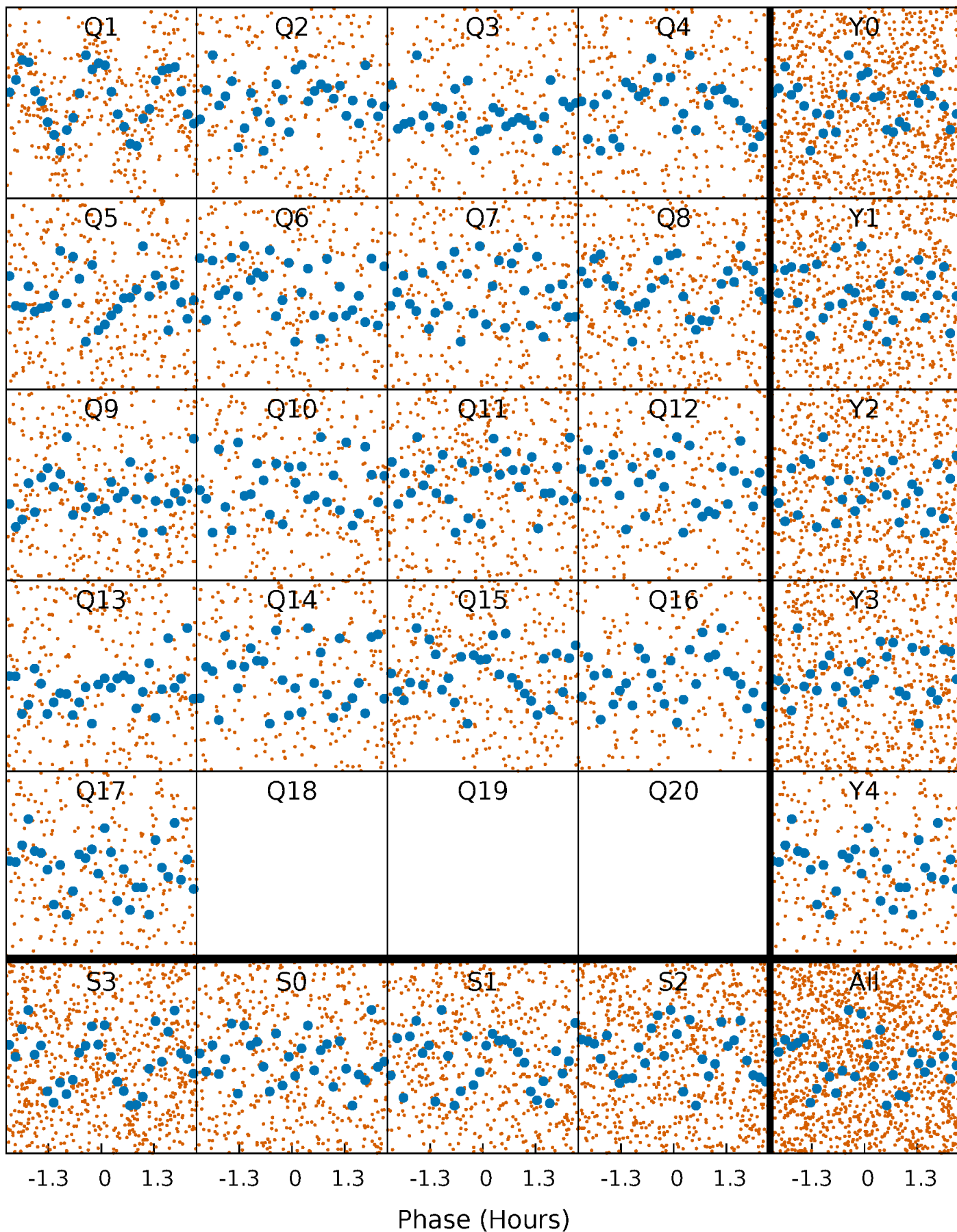


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



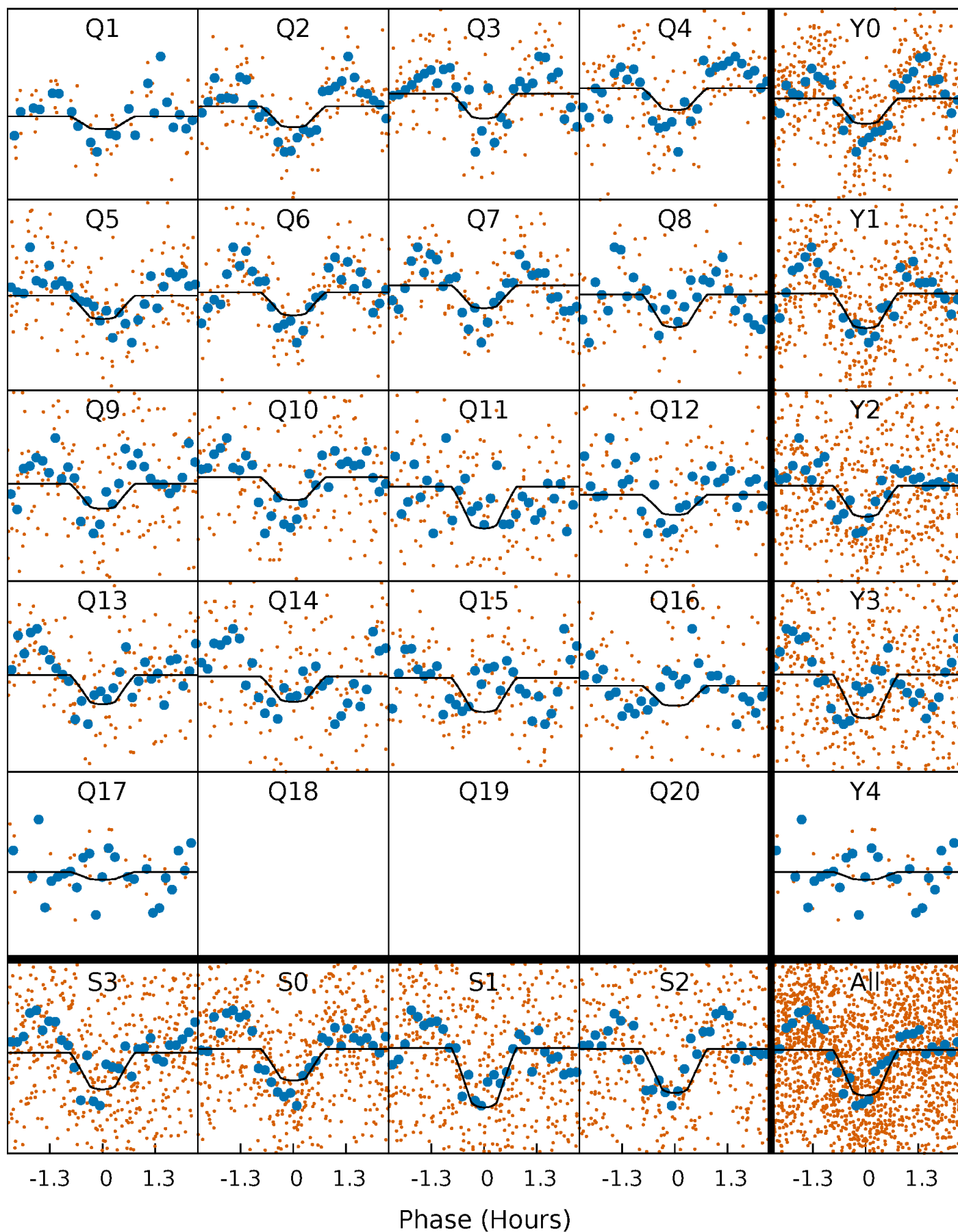
PDC Quarter-Phased Transit Curves

TCE 003446471-02 P= 0.746716 Days $T_0=131.695923$ (BKJD)



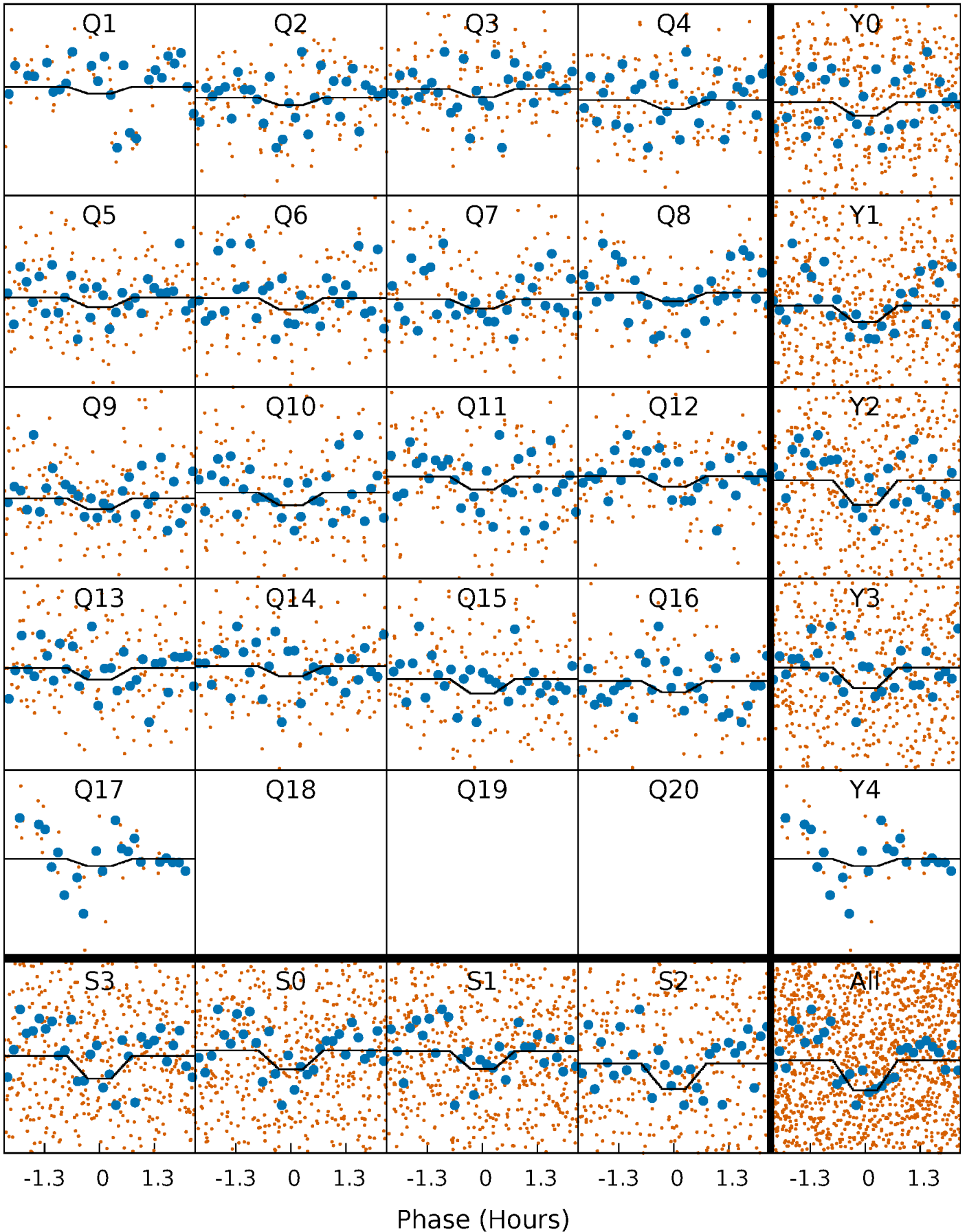
DV Quarter-Phased Transit Curves

TCE 003446471-02 P= 0.746716 Days $T_0=131.695923$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

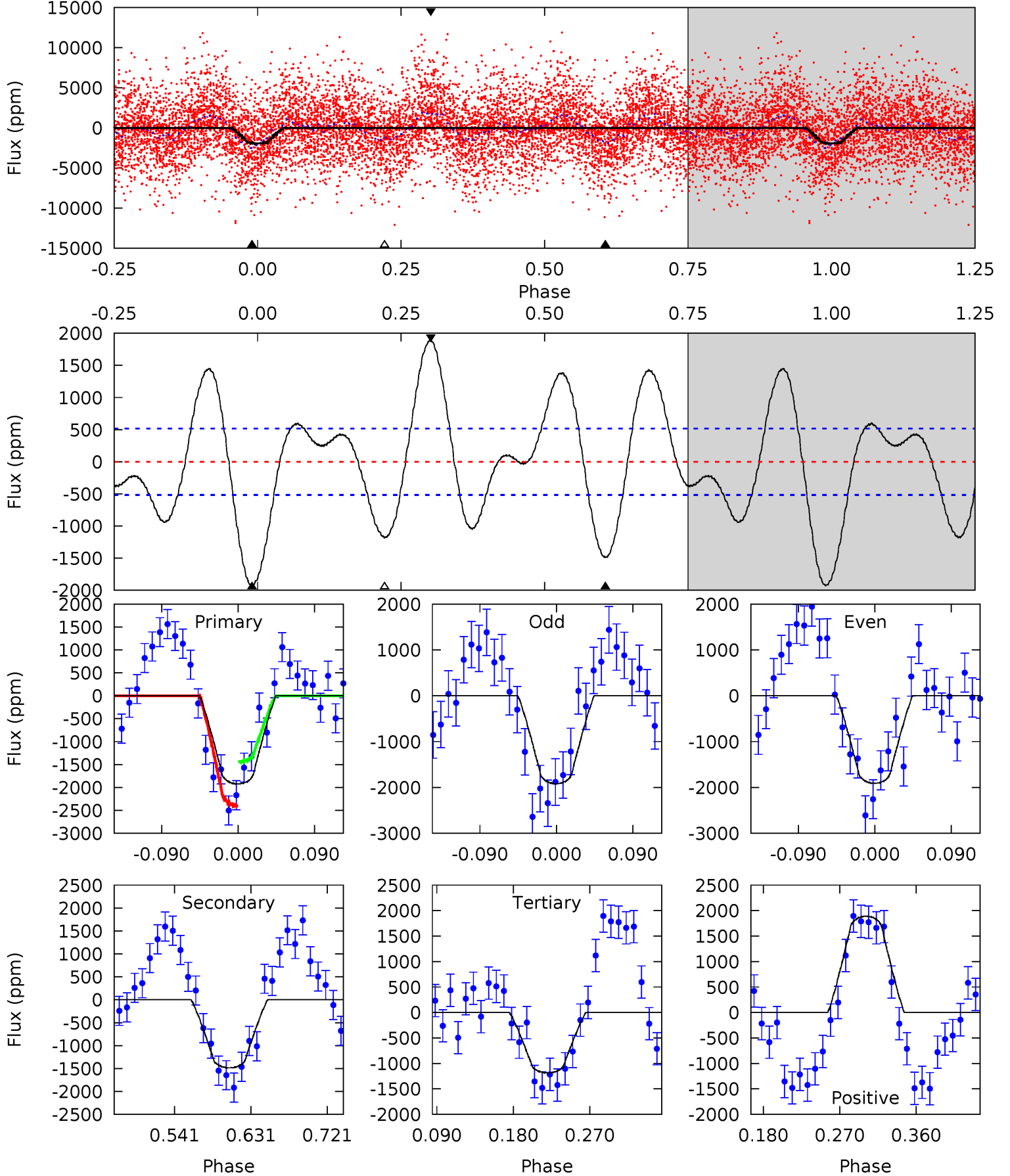
TCE 003446471-02 $P = 0.746709$ Days $T_0 = 131.694471$ (BKJD)



DV Model-Shift Uniqueness Test

003446471-02, P = 0.746716 Days, E = 131.695923 Days

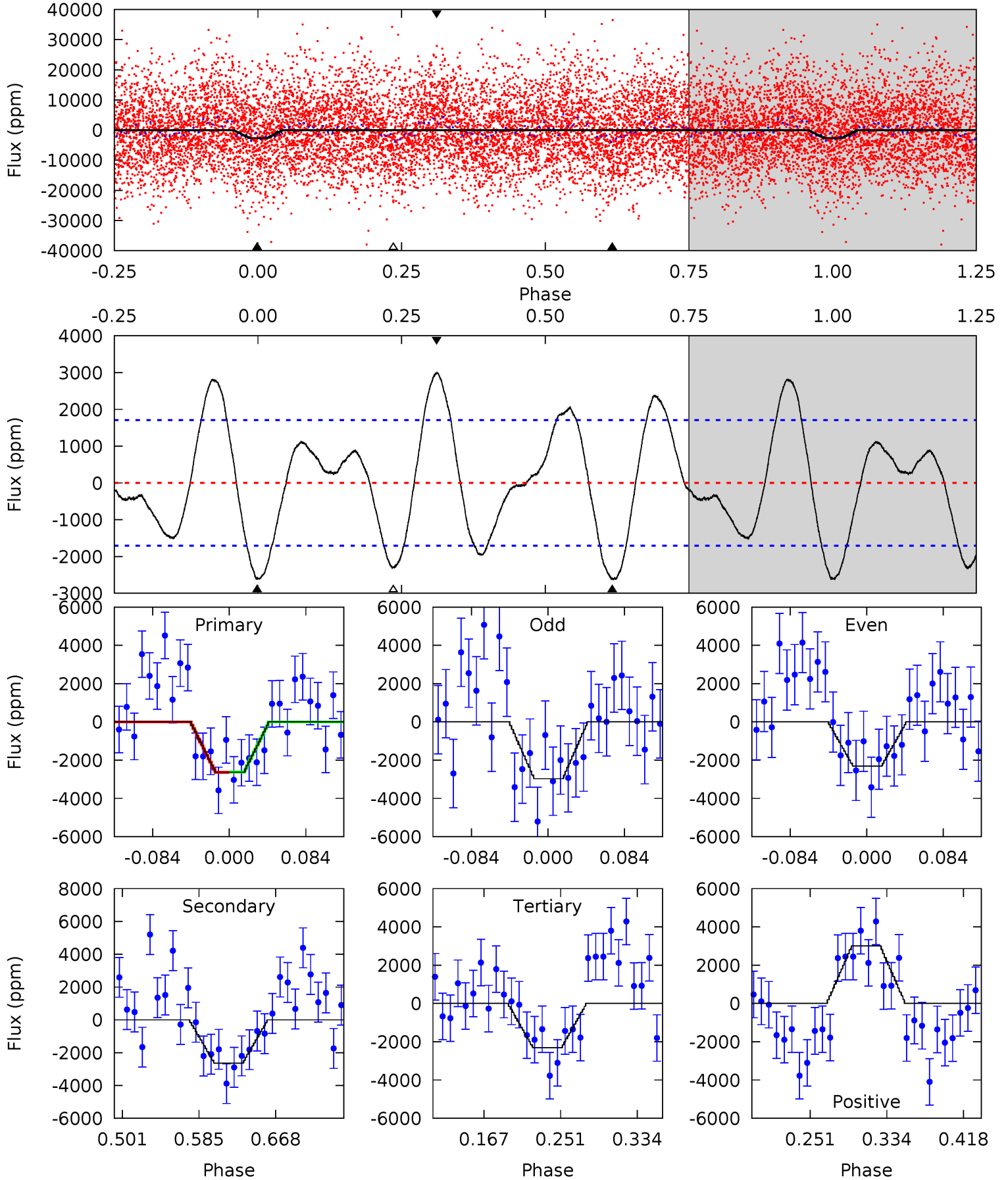
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.1	13.2	10.5	16.8	4.59	1.69	6.43	6.59	0.31	2.69	-3.59	0.04	0.92	0.50	4.24



Alt Model-Shift Uniqueness Test

003446471-02, P = 0.746709 Days, E = 131.694471 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.09	7.09	6.24	8.09	4.60	1.73	3.43	0.85	-1.00	0.85	-1.00	0.89	0.91	0.53	0.02



Stellar Parameters For KIC 003446471

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	ρ_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	7340^{+205}_{-334}	$3.671^{+0.450}_{-0.075}$	$0.070^{+0.200}_{-0.300}$	$3.522^{+0.412}_{-1.753}$	$2.123^{+0.244}_{-0.609}$	$0.068^{+0.293}_{-0.018}$
	+3%/-5%	+12%/-2%	+286%/-429%	+12%/-50%	+11%/-29%	+429%/-26%
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 003446471-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-1485 ± 113	$13.65^{+8.09}_{-6.65}$	5708^{+391}_{-676}	6801^{+3358}_{-1680}	$1.873^{+4.950}_{-1.121}$
Alt.	-2632 ± 371	$17.66^{+8.46}_{-7.86}$	5686^{+390}_{-694}	7021^{+2723}_{-1513}	$1.972^{+4.168}_{-1.067}$

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

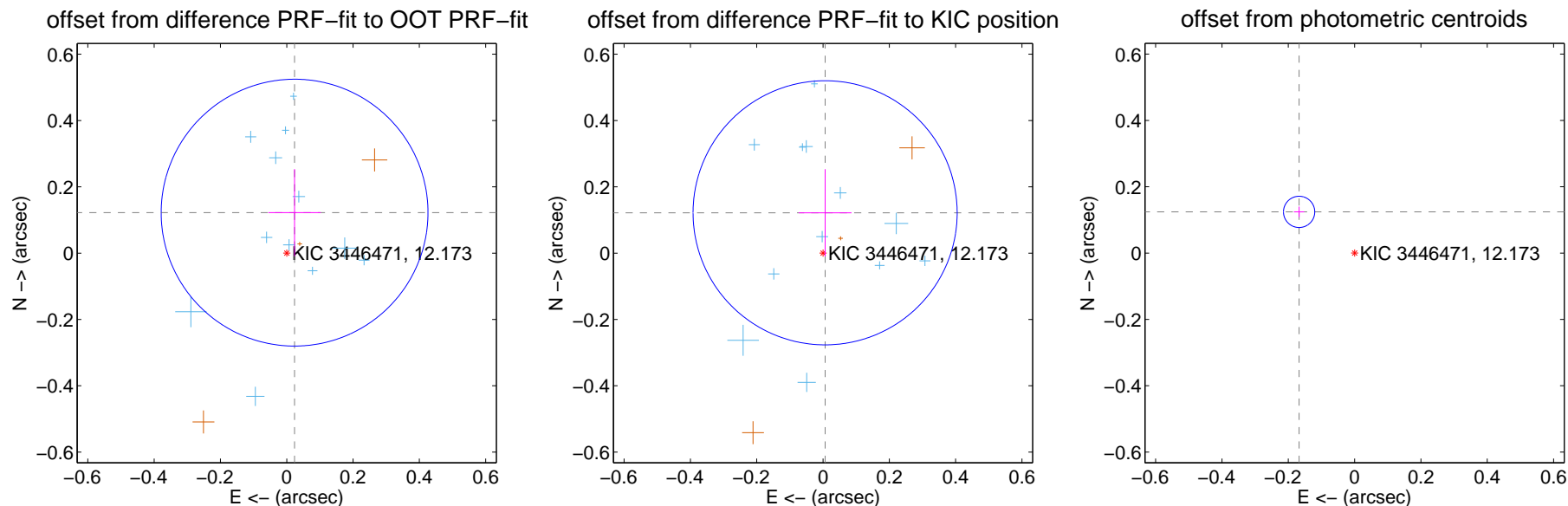
DV Centroid Data

Supplemental centroid analysis for 003446471-02. Kepler magnitude: 12.17. Transit SNR 18.86

There are 14 quarters with good PRF difference image offsets

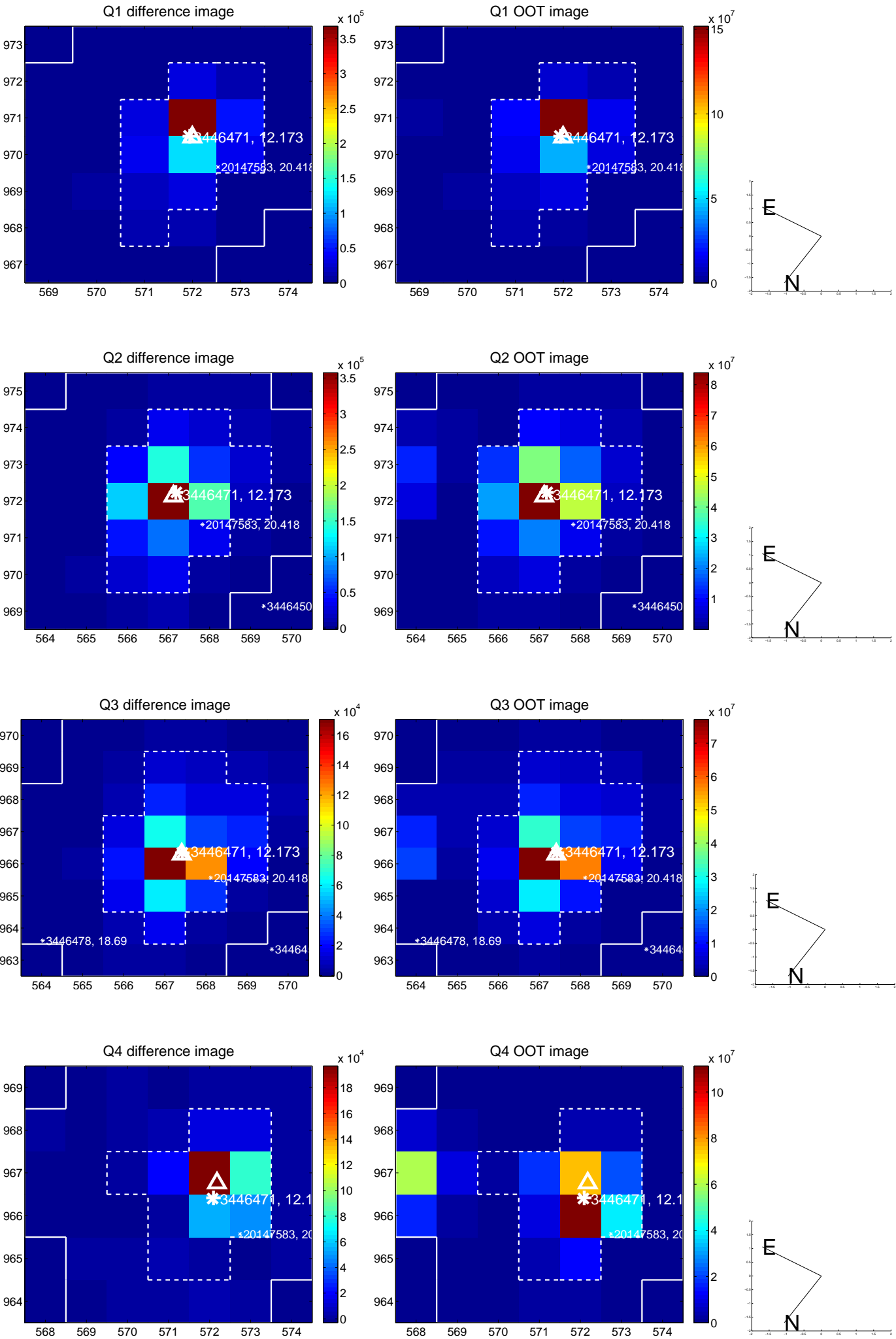
The direct PRF centroid is offset from the target star catalog position by about 0.02 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.124 ± 0.134	0.93	-0.024 ± 0.079	0.122 ± 0.131
PRF-fit source offset from KIC position	0.122 ± 0.133	0.92	-0.006 ± 0.080	0.122 ± 0.132
photometric centroid source offset	0.21 ± 0.02	13.27	0.17 ± 0.02	0.12 ± 0.02

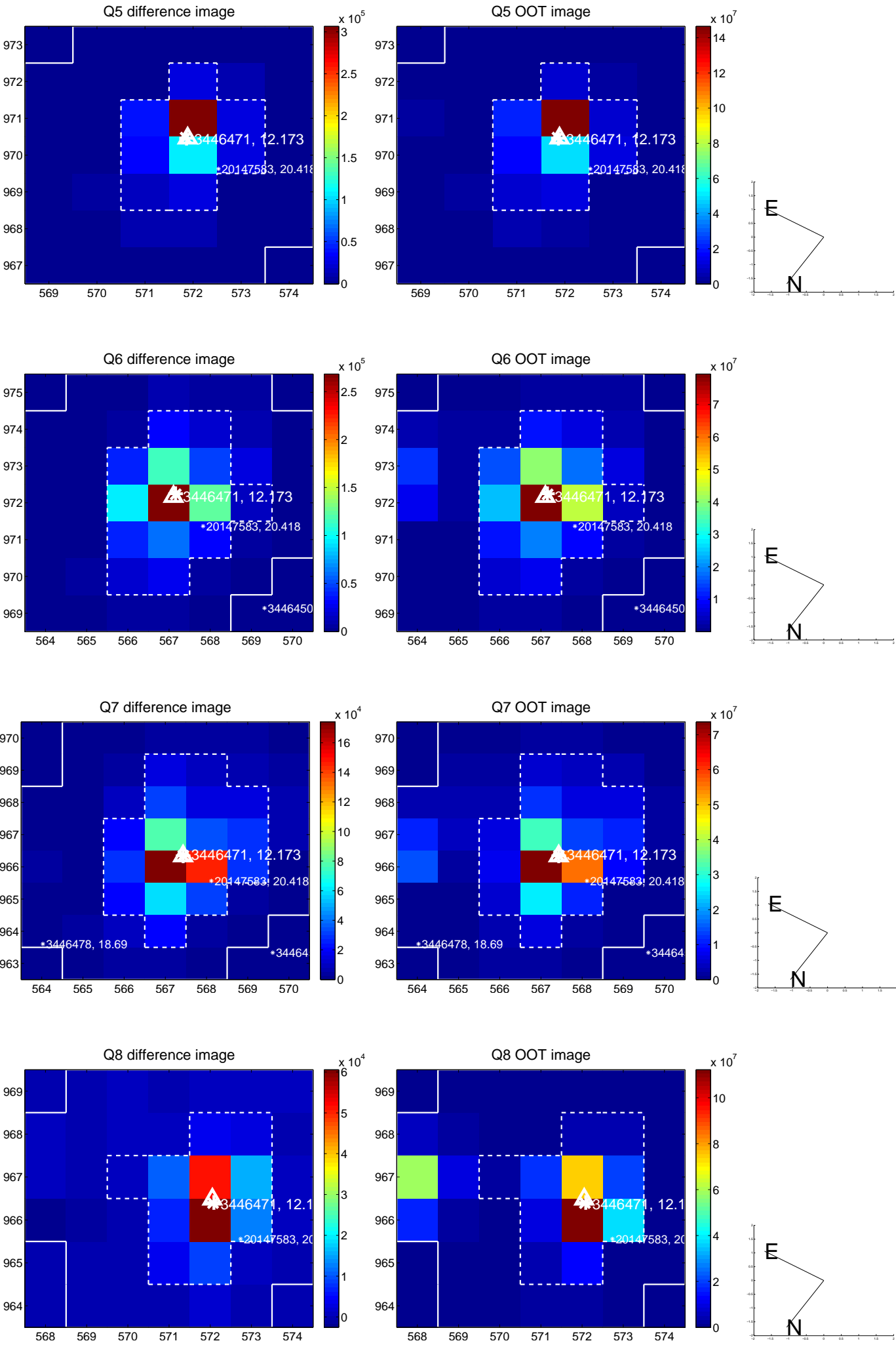


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

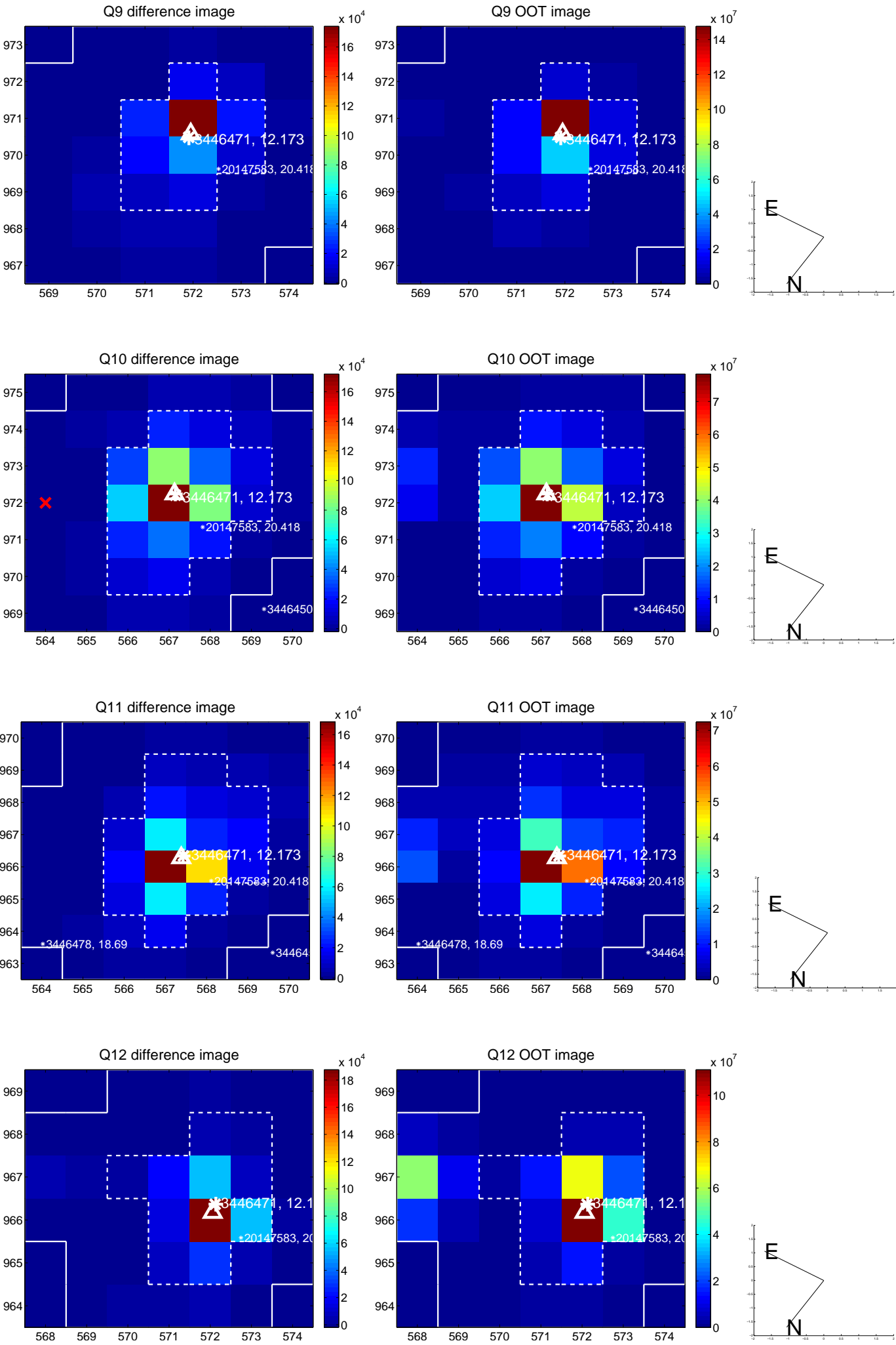
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



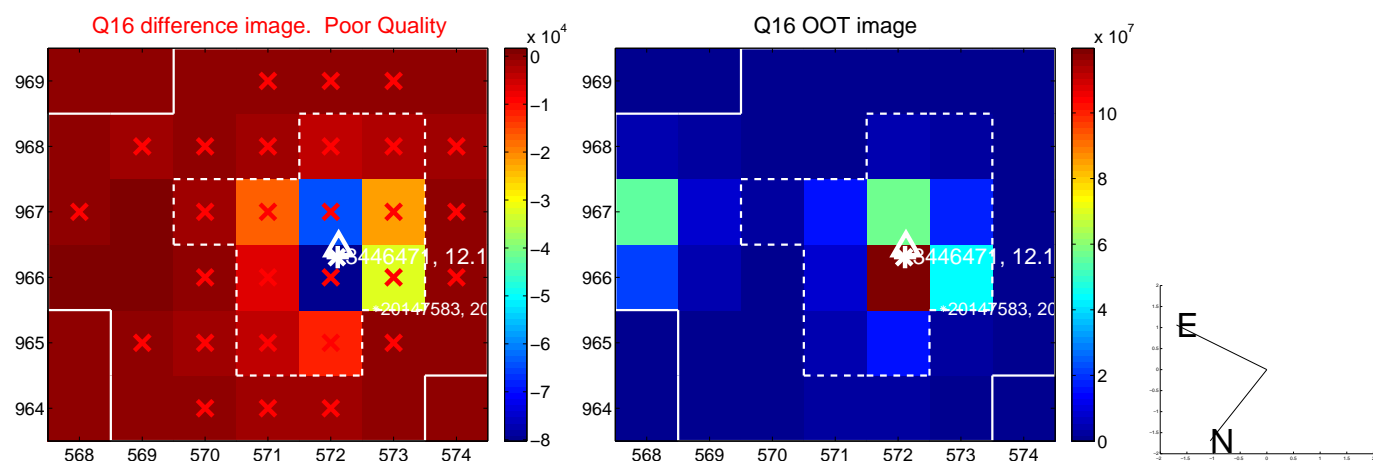
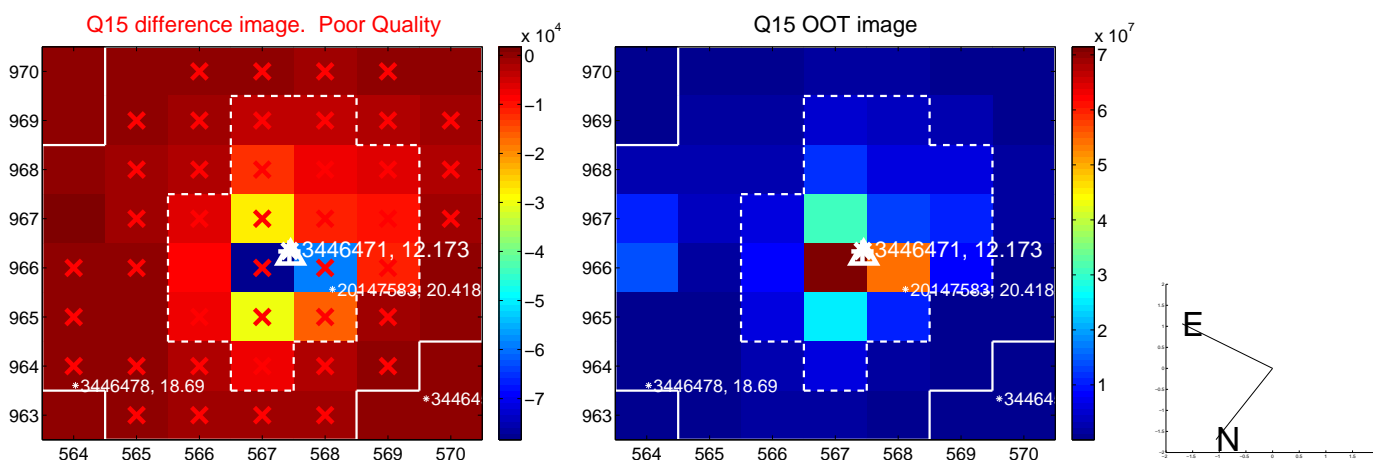
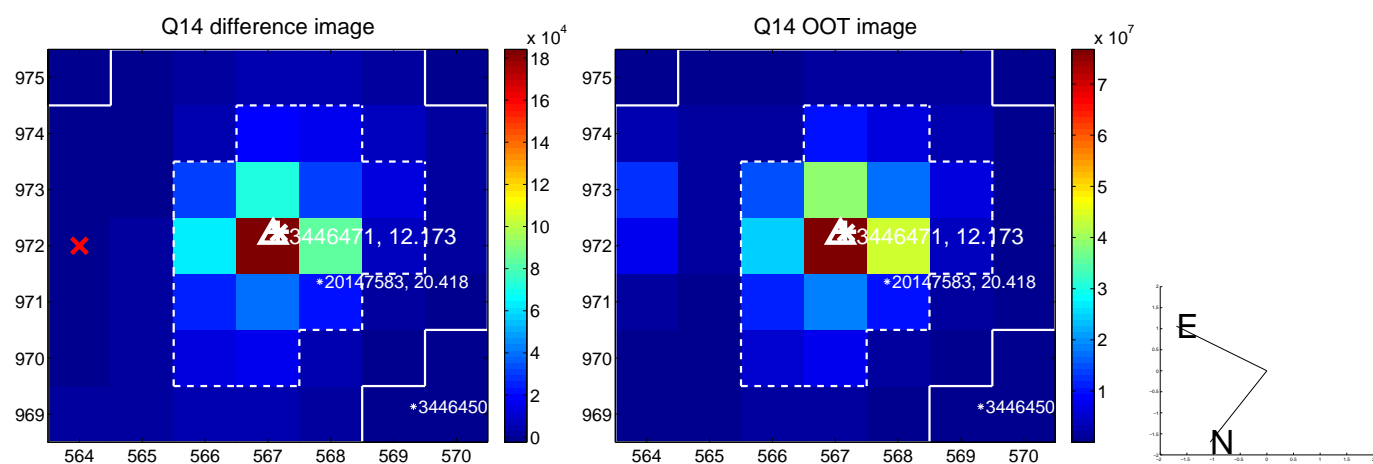
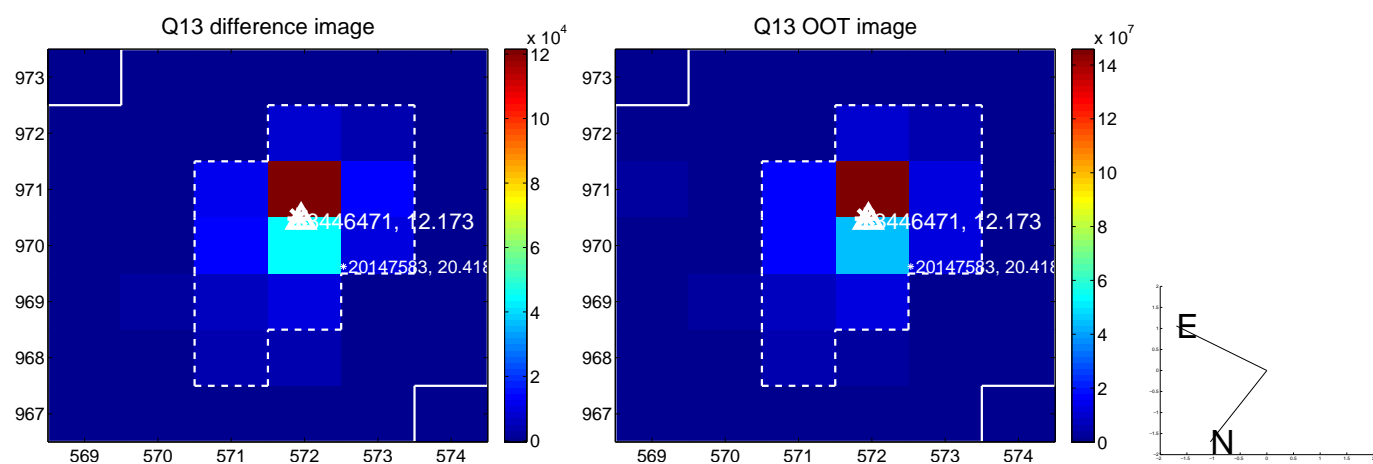
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



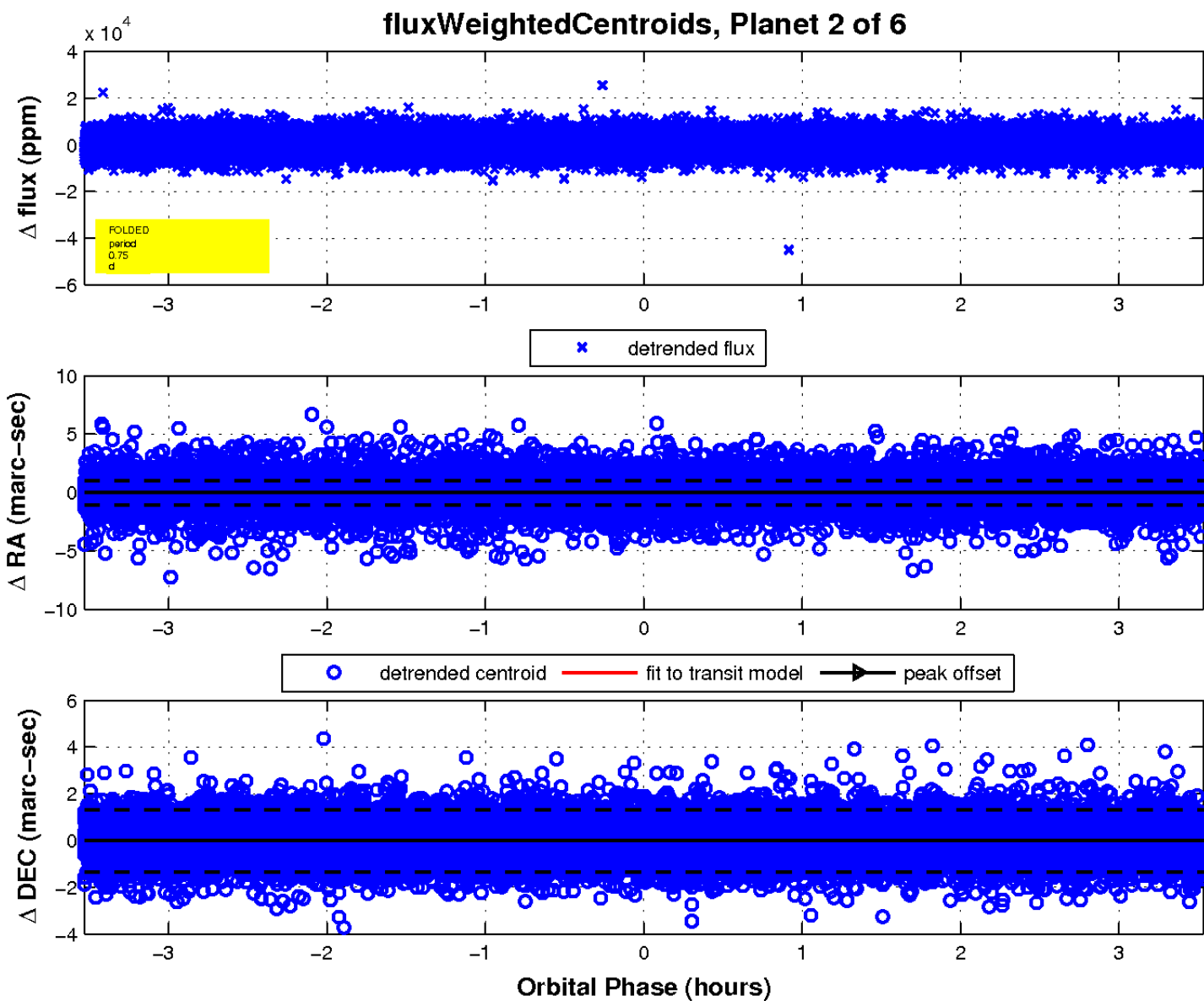
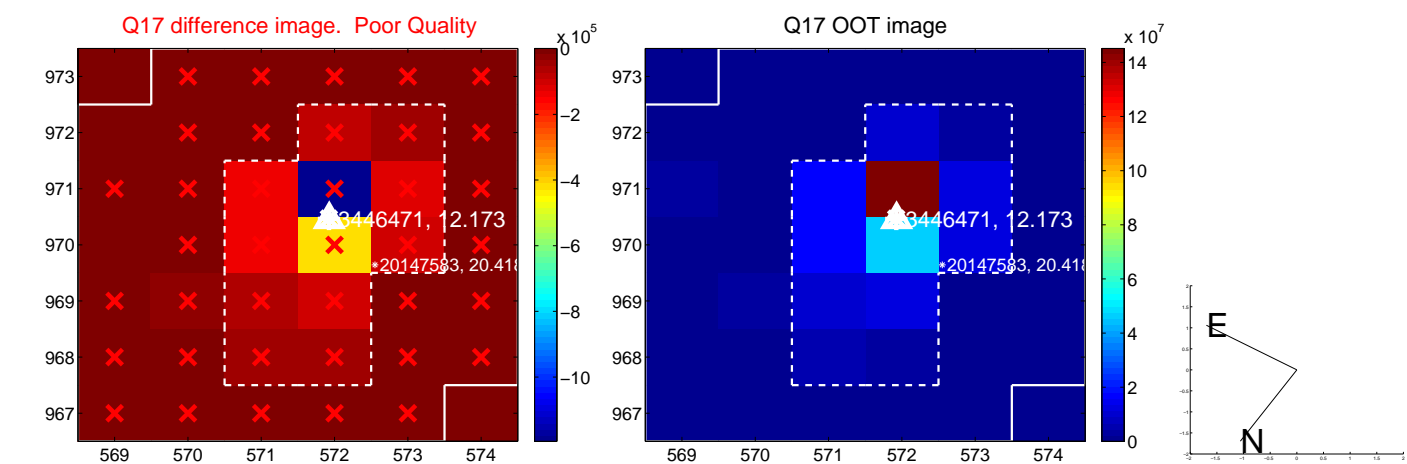
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

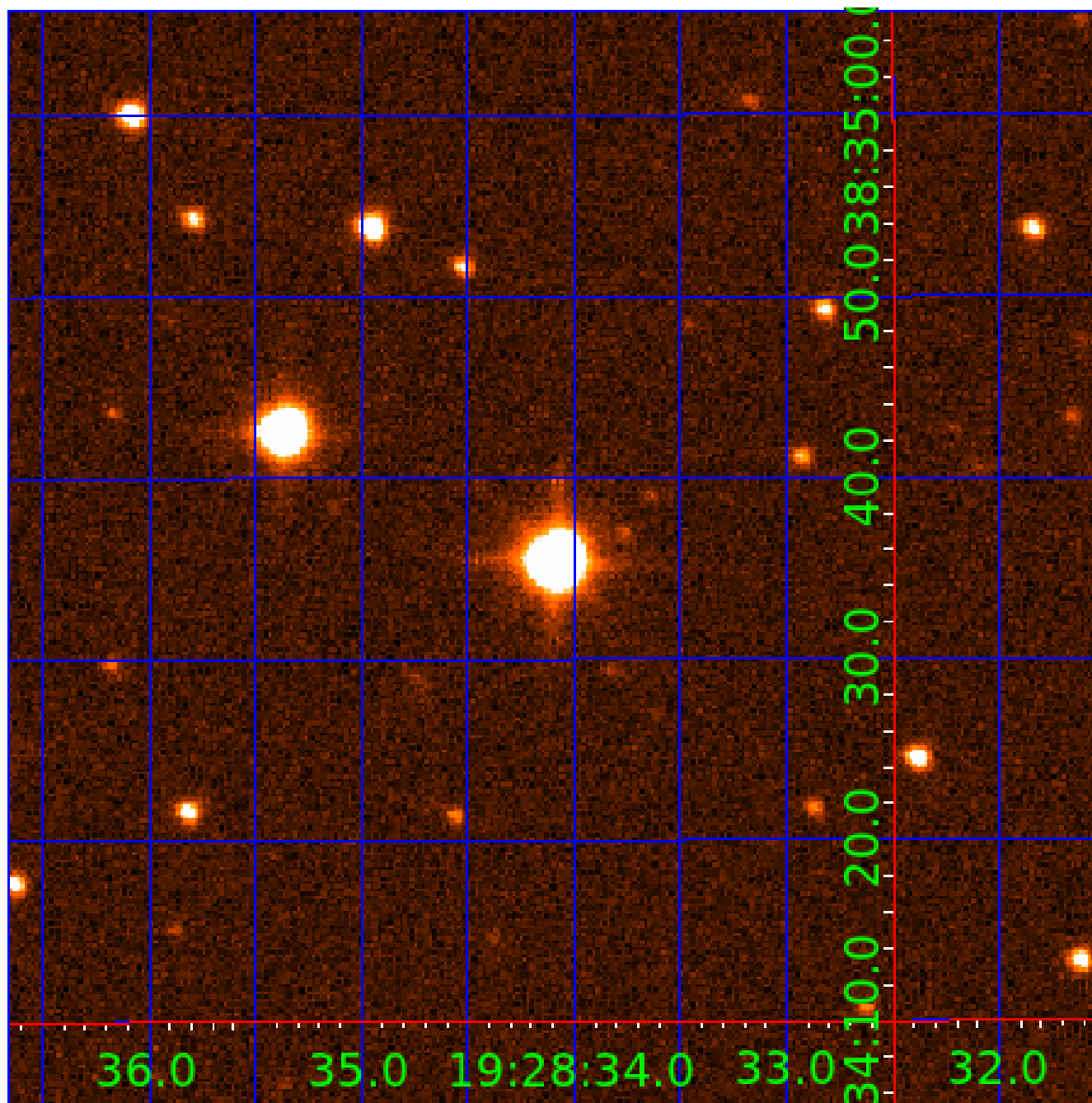


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 003446471

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})
003446471-01	OBS	No	1.032043	132.335455	442.4	6.943	10.2	13.6	3.52	7340	9.09	48896.10
003446471-02	OBS	No	0.746716	131.695923	1881.9	1.178	12.5	18.9	3.52	7340	15.69	75277.38
003446471-03	OBS	No	25.762100	143.172884	8121.5	1.362	8.8	9.2	3.52	7340	56.94	670.24
003446471-04	OBS	No	32.665761	146.287867	4836.2	1.711	8.2	8.8	3.52	7340	26.33	488.37
003446471-05	OBS	No	49.048118	145.173786	5492.5	1.655	7.7	8.6	3.52	7340	28.02	284.04
003446471-06	OBS	No	31.954637	143.557285	3468.9	2.615	7.7	7.1	3.52	7340	21.27	502.91

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003446471-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT
003446471-02	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT
003446471-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
003446471-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
003446471-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
003446471-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT

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

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

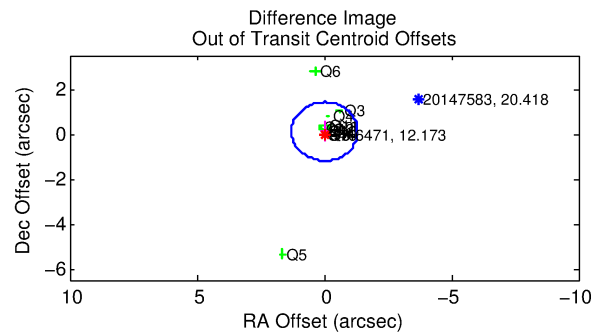
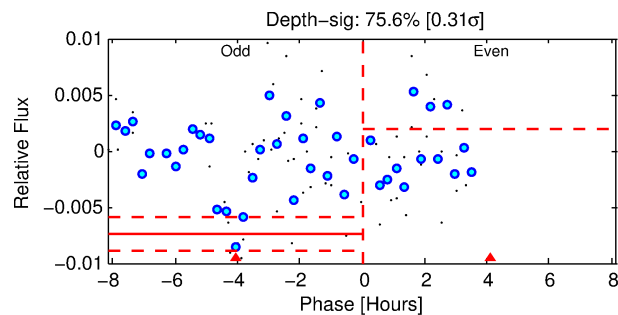
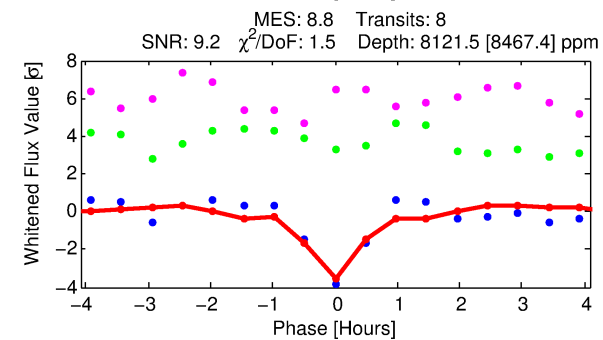
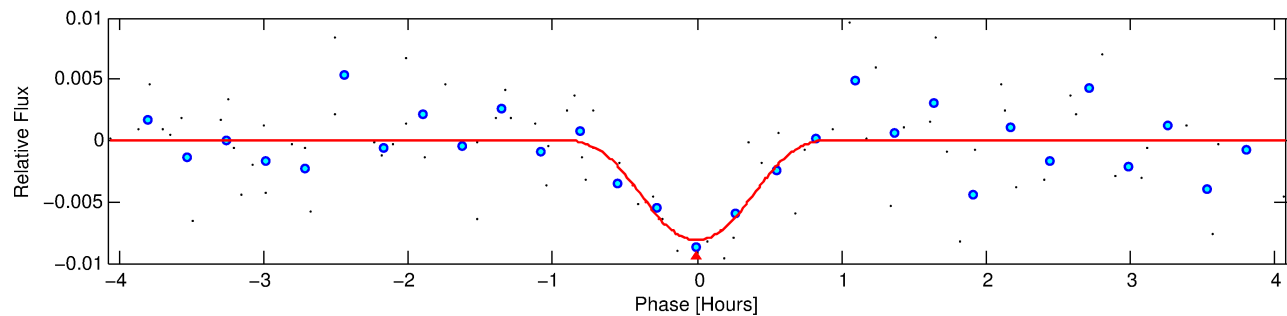
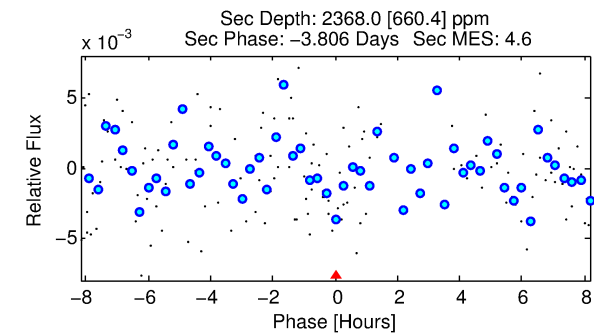
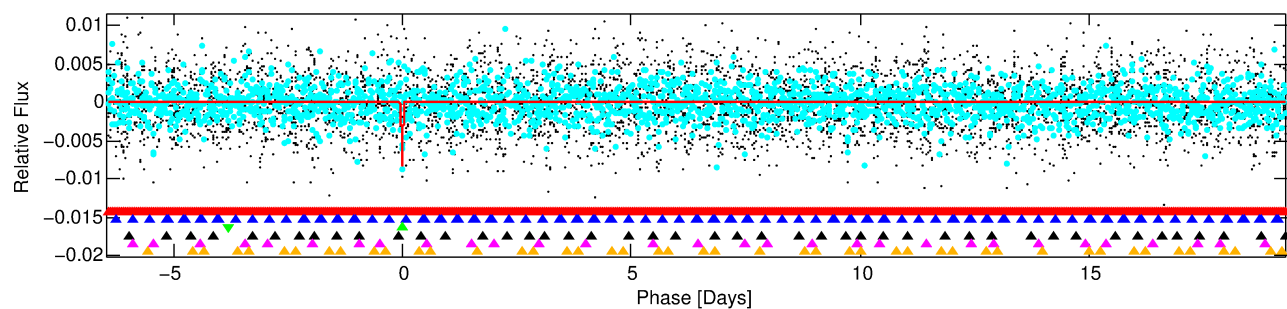
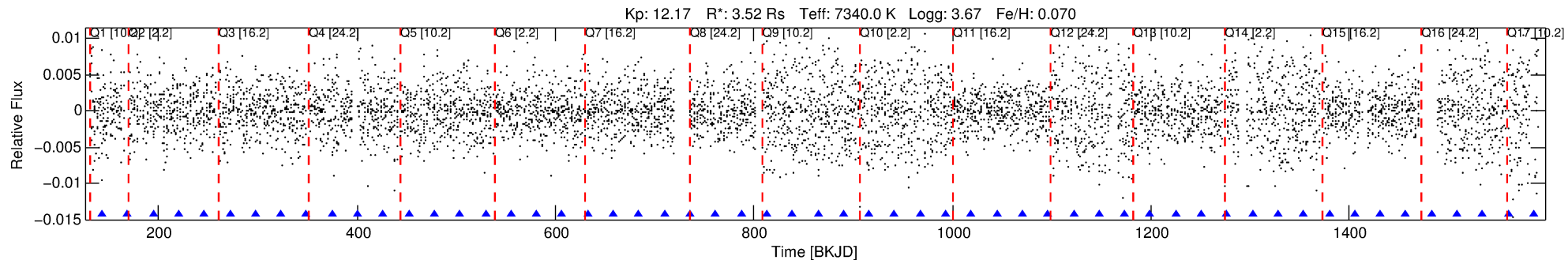
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003446471-03

No Significant Match Found

DV One-Page Summary

KIC: 3446471 Candidate: 3 of 6 Period: 25.762 d



DV Fit Results:

Period = 25.76210 [0.00017] d
Epoch = 143.1729 [0.0045] BKJD
Rp/R* = 0.1482 [3.0825]
a/R* = 82.20 [287.16]
b = 1.00 [4.48]
Seff = 670.24 [527.92]
Teq = 1297 [255] K
Rp = 56.94 [1185.04] Re
a = 0.2194 [0.1051] AU
Ag = 19.34 [804.88] [0.02σ]
Teffp = 4207 [43762] K [0.07σ]

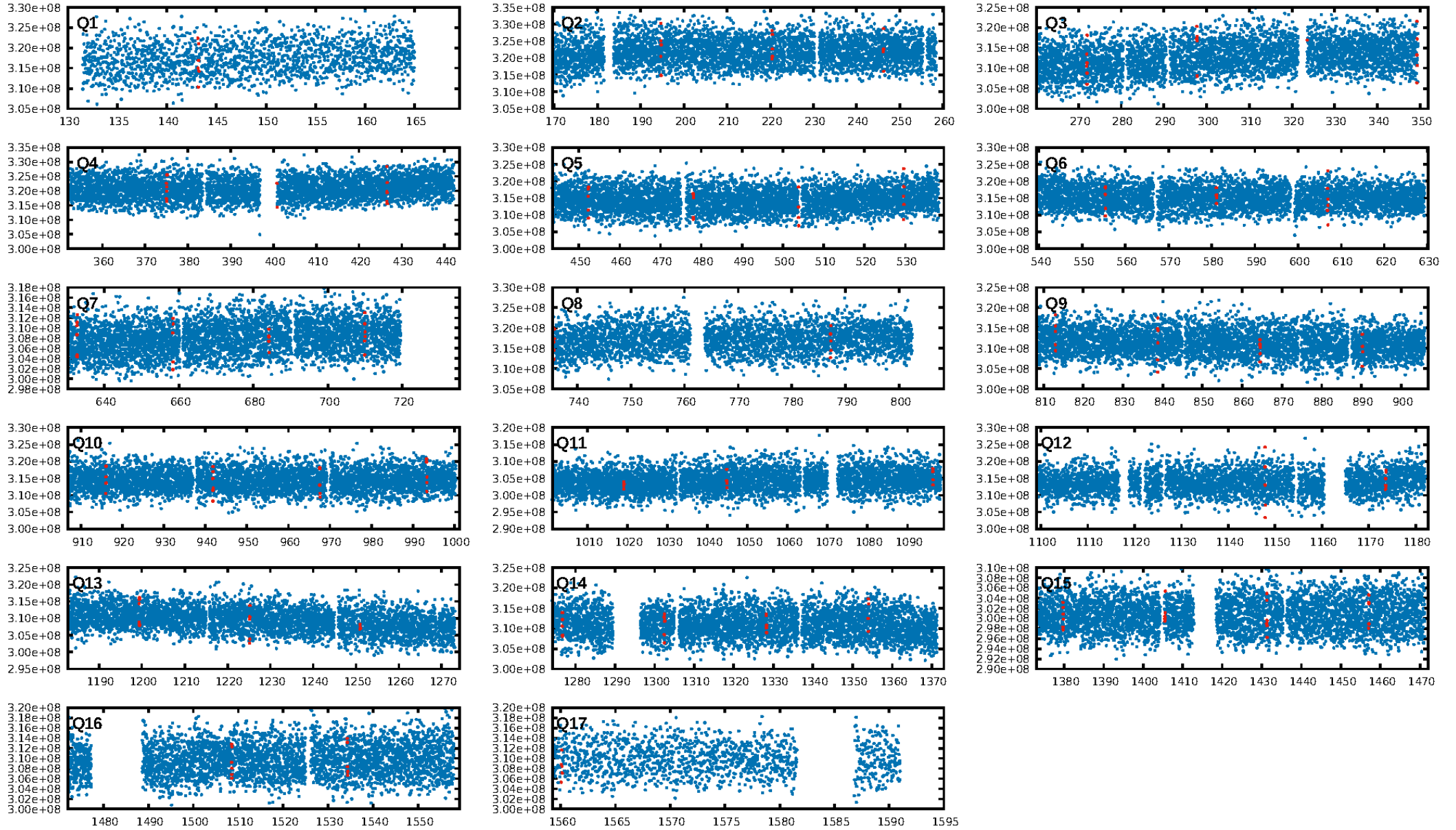
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [83.89σ]
LongPeriod-sig: 100.0% [50.41σ]
ModelChiSquare2-sig: 87.1%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 6.89e-10
RollingBand-fgt: 1.00 [7/7]
GhostDiagnostic-chr: 0.3522
Centroid-sig: 2.4%
Centroid-so: 0.183 arcsec [7.41σ]
OotOffset-rm: 0.113 arcsec [0.26σ]
KicOffset-rm: 0.139 arcsec [0.31σ]
OotOffset-st: 3/4/4/4 [15]
KicOffset-st: 3/4/4/4 [15]
DiffImageQuality-fgm: 0.60 [9/15]
DiffImageOverlap-fno: 0.38 [6/16]

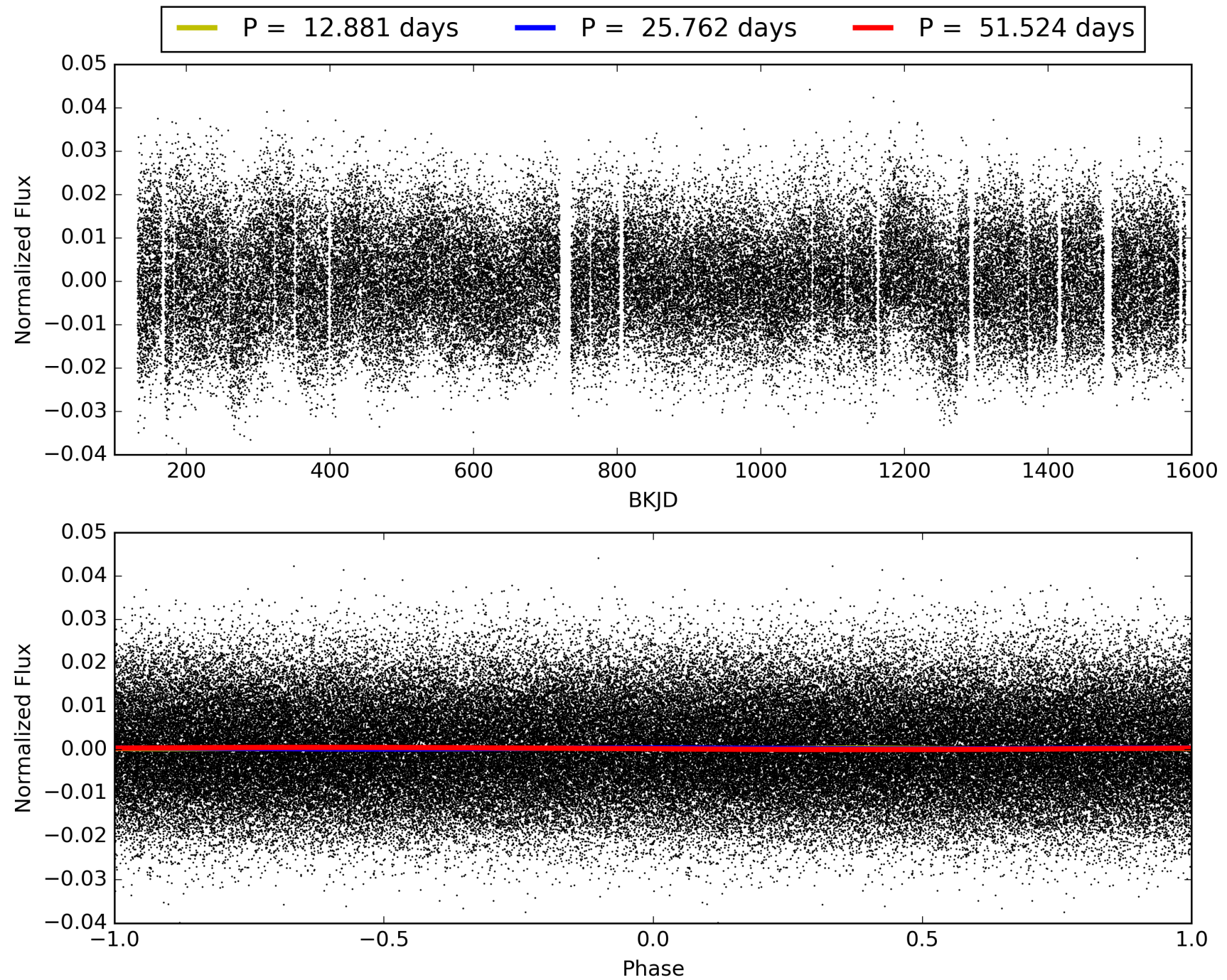
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 06:34:29 Z

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

TCE 003446471-03, PDC Light Curves

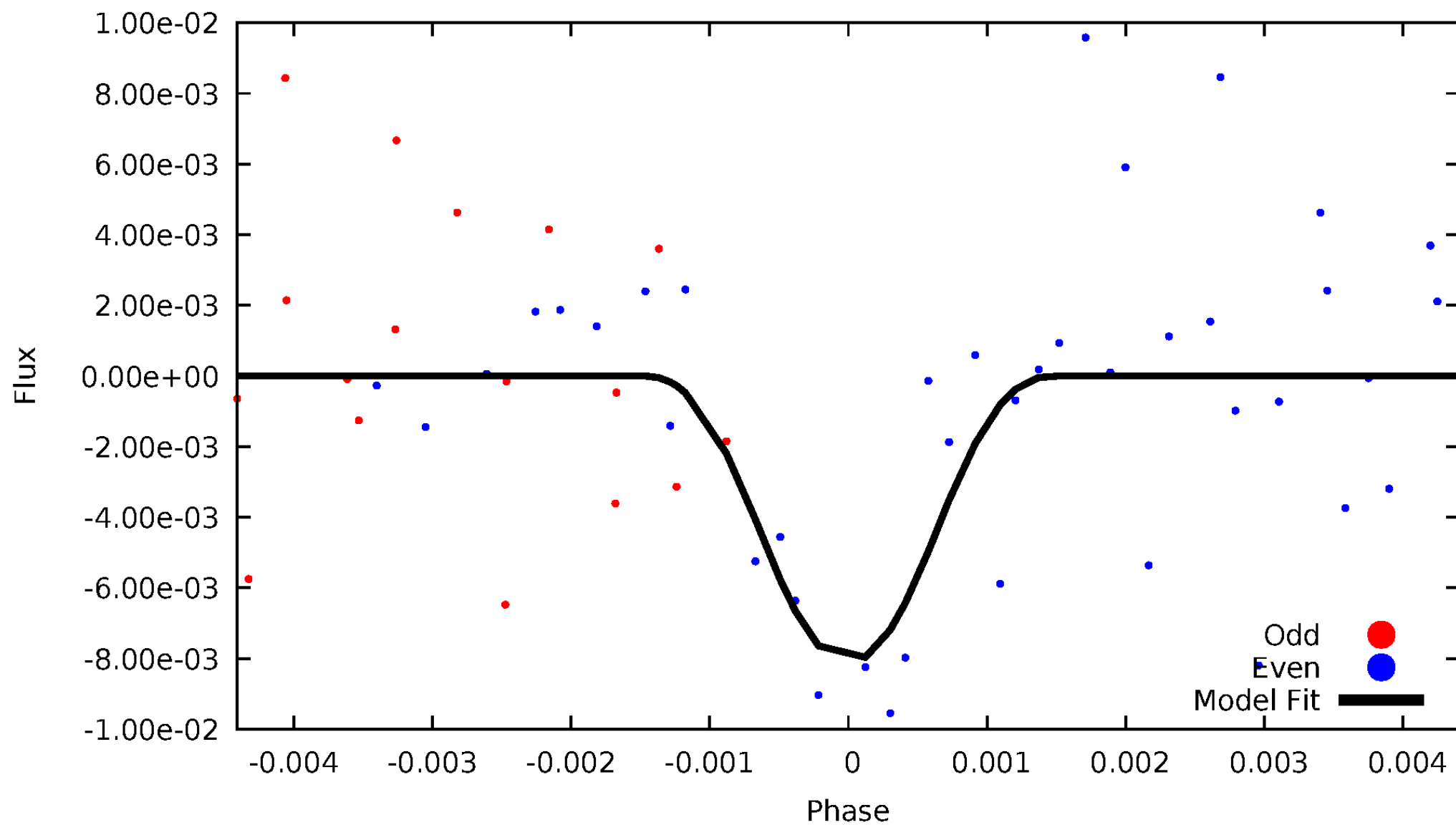


TCE 003446471-03



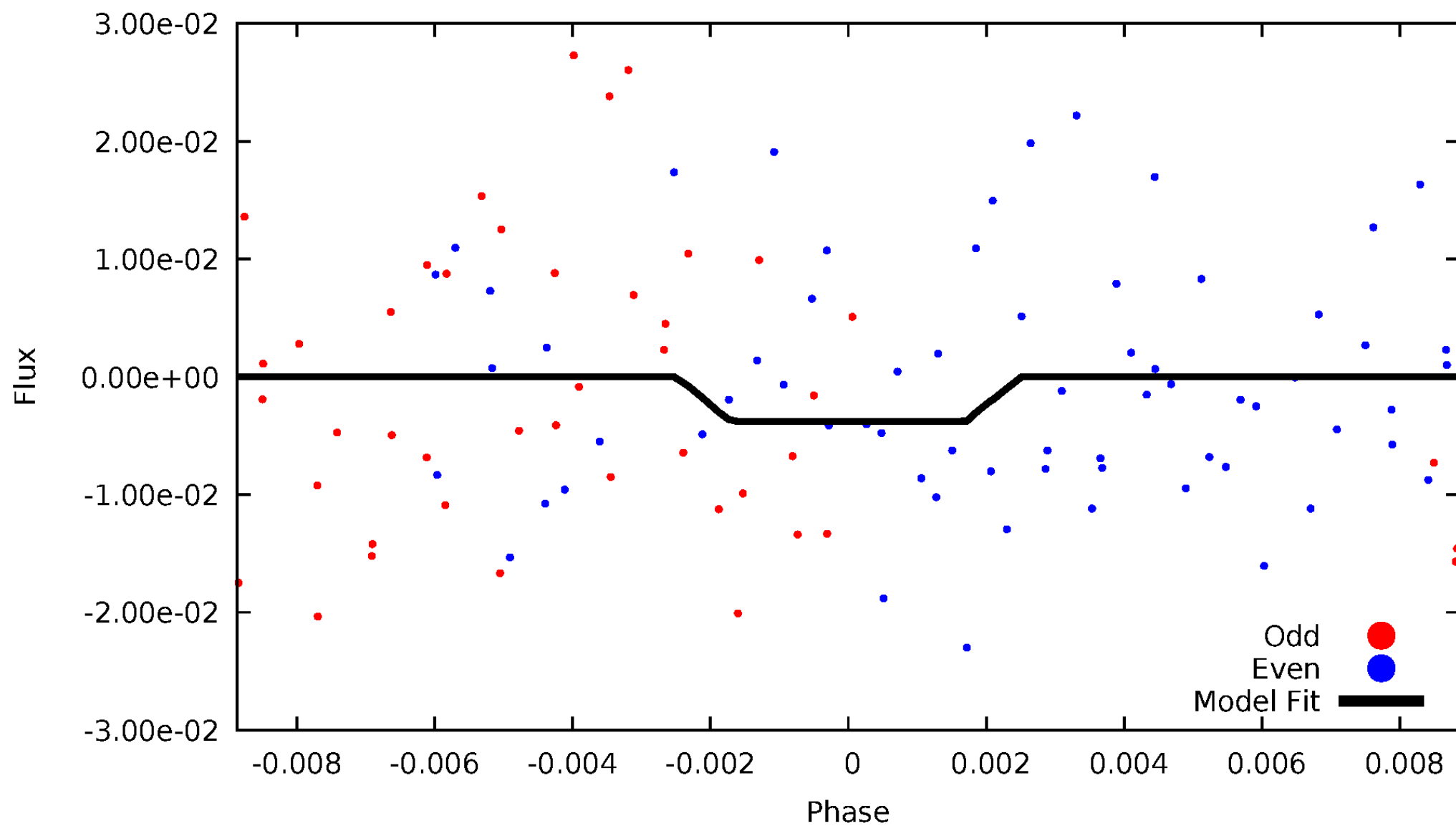
DV Odd/Even

TCE 003446471-03



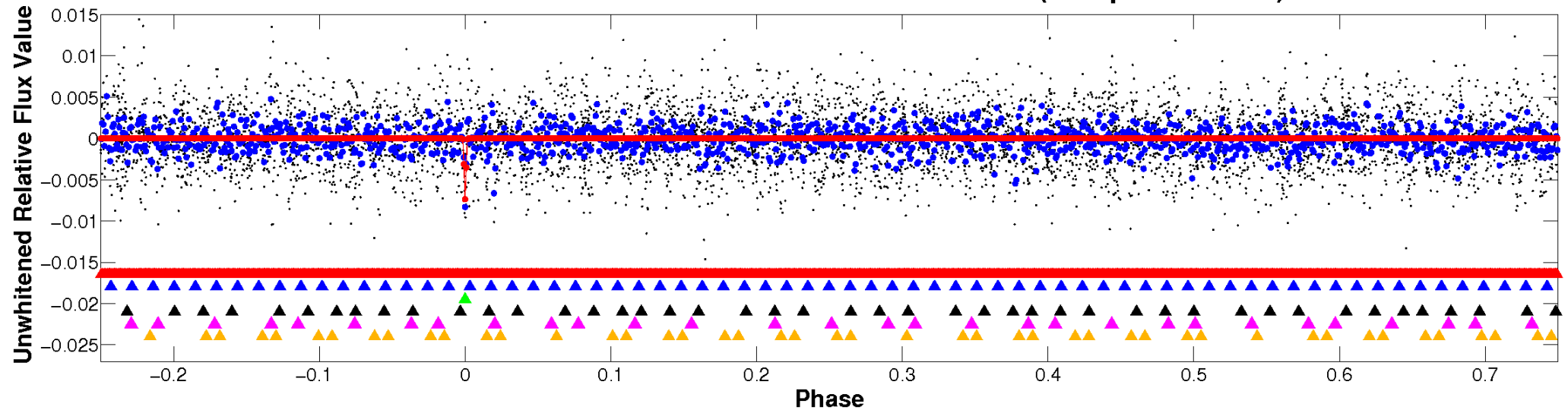
ALT Odd/Even

TCE 003446471-03

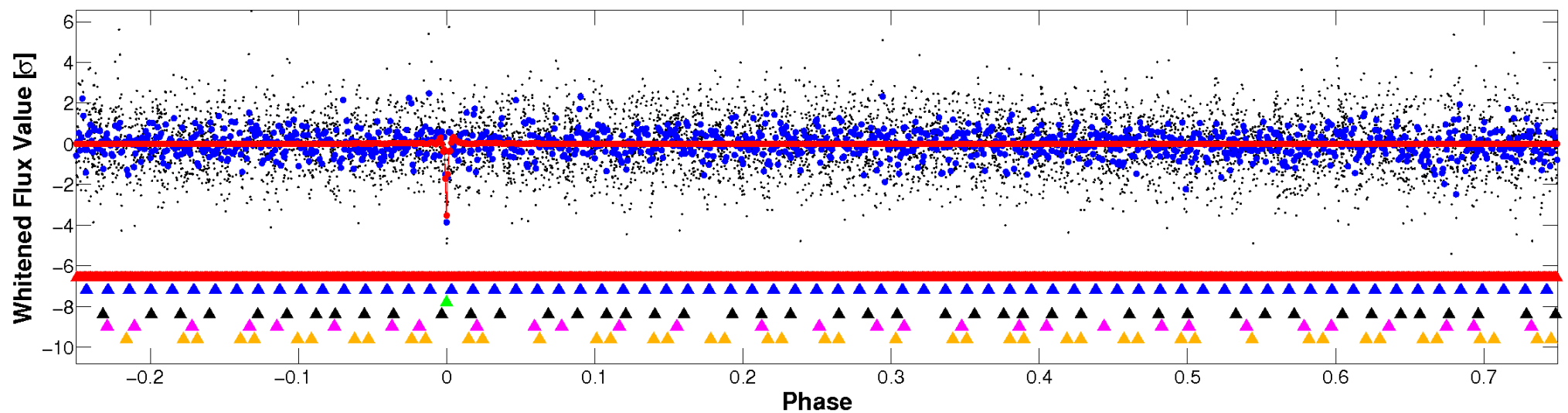


Non-Whitened Vs. Whitened Light Curve

Planet 3 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

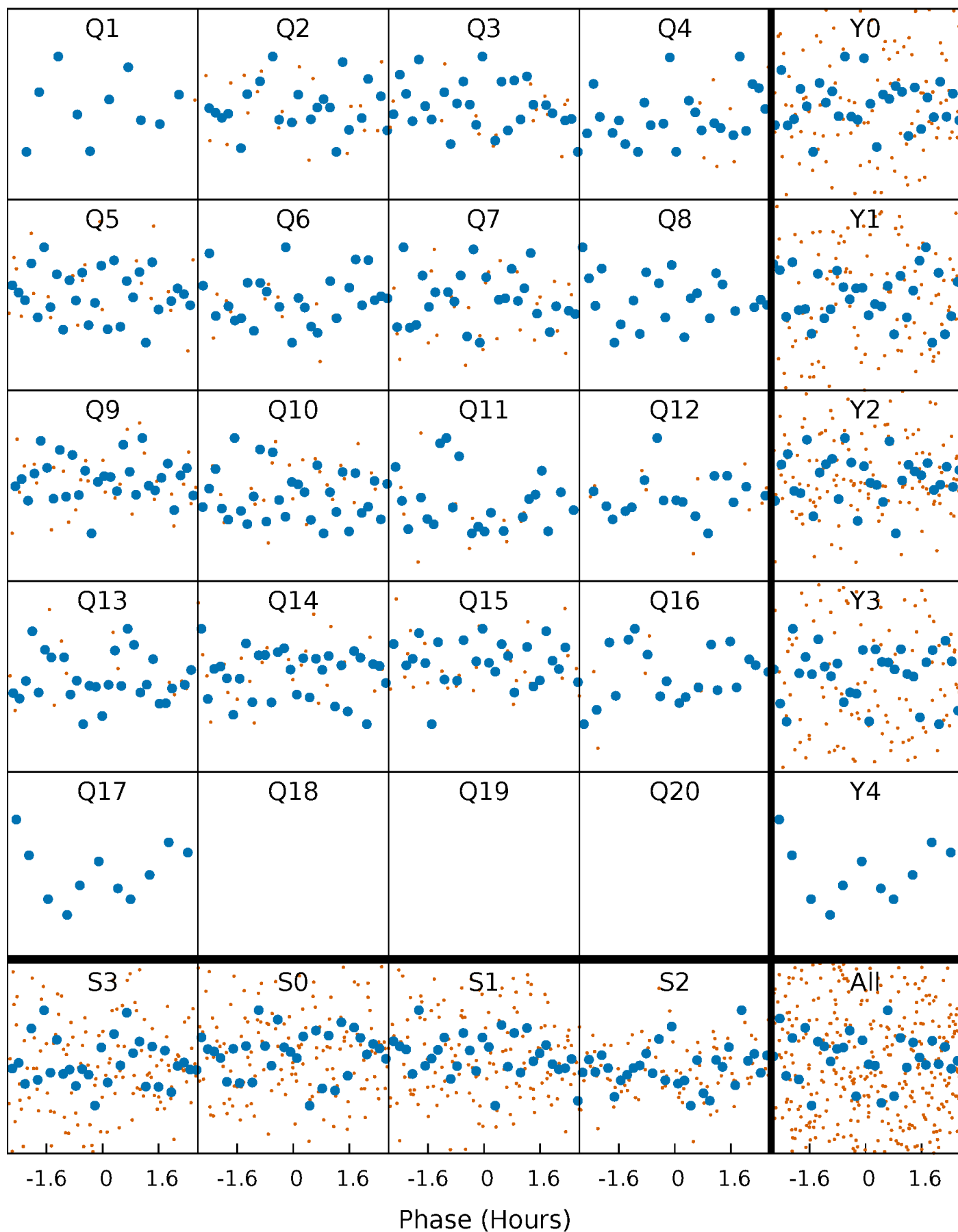


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



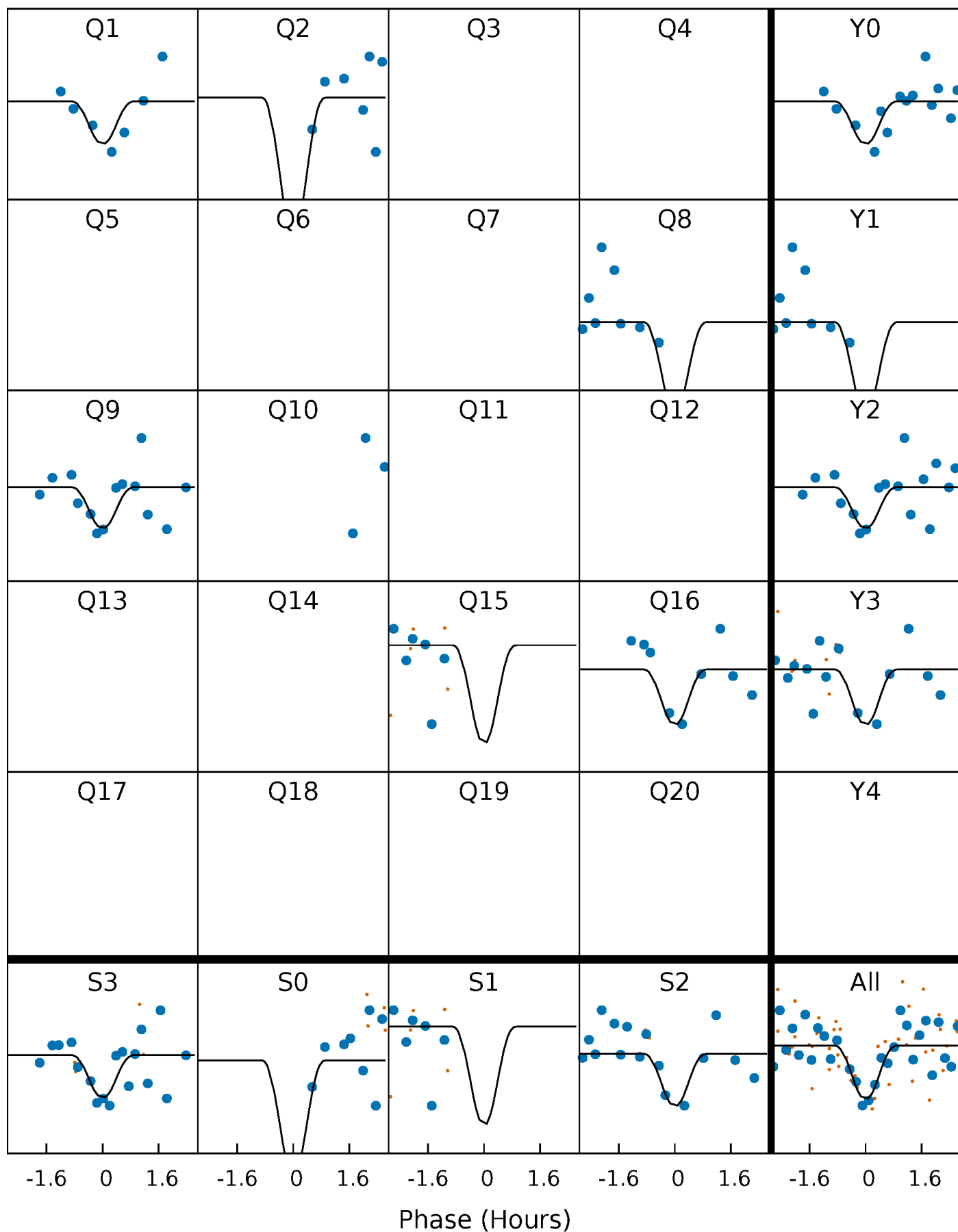
PDC Quarter-Phased Transit Curves

TCE 003446471-03 P= 25.762100 Days $T_0=143.172884$ (BKJD)



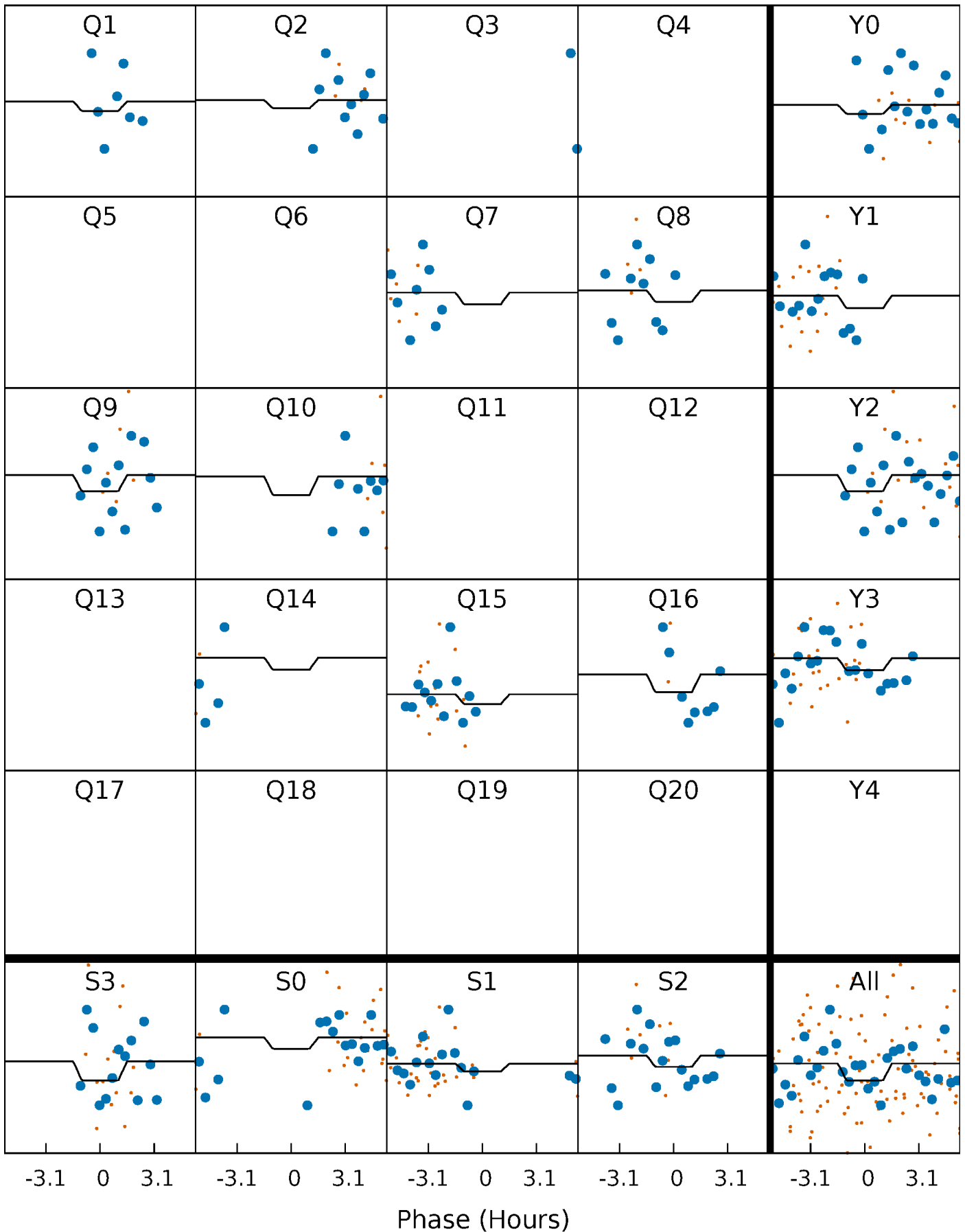
DV Quarter-Phased Transit Curves

TCE 003446471-03 P= 25.762100 Days $T_0=143.172884$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

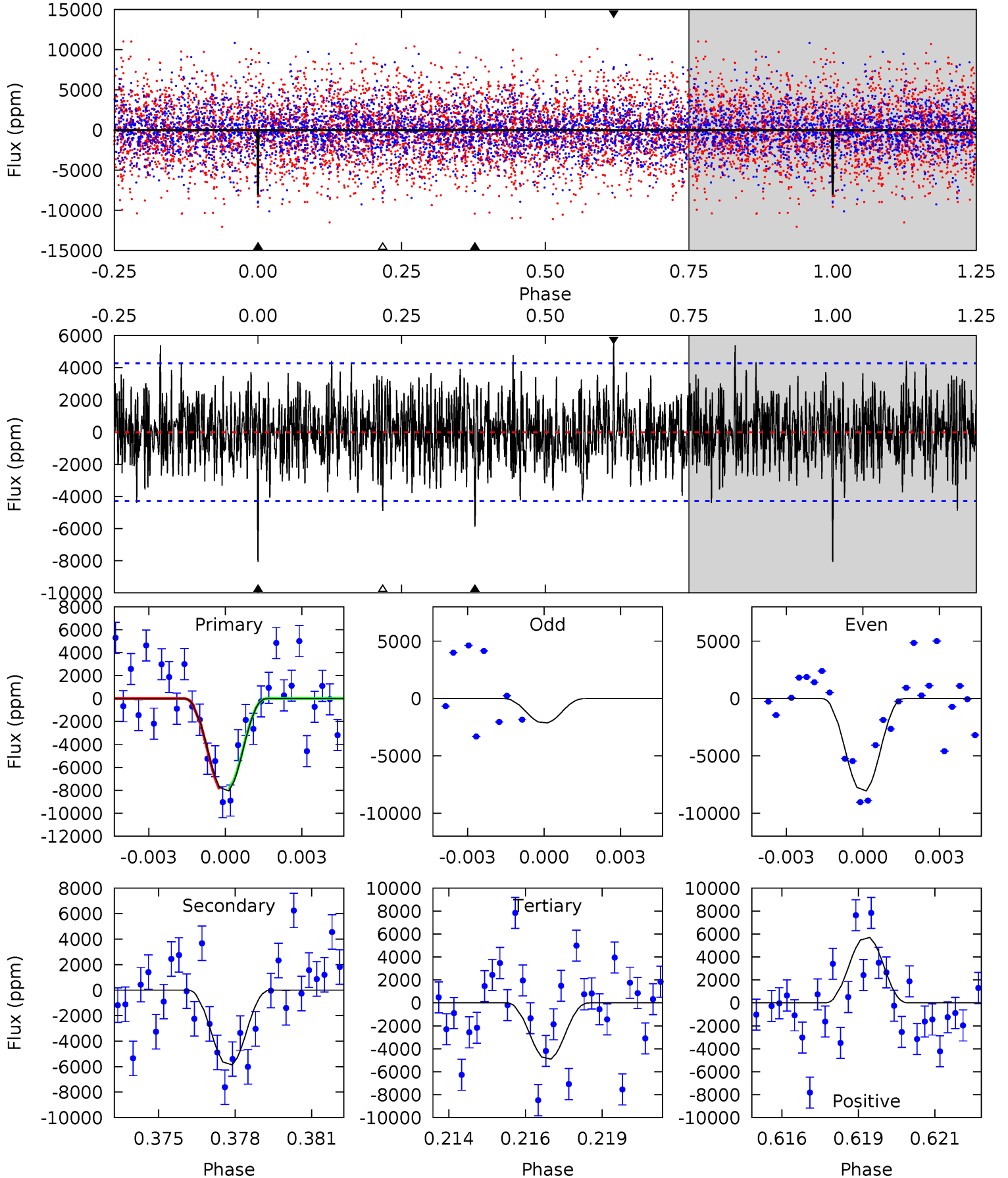
TCE 003446471-03 P= 25.762165 Days $T_0=143.147128$ (BKJD)



DV Model-Shift Uniqueness Test

003446471-03, P = 25.762100 Days, E = 117.410784 Days

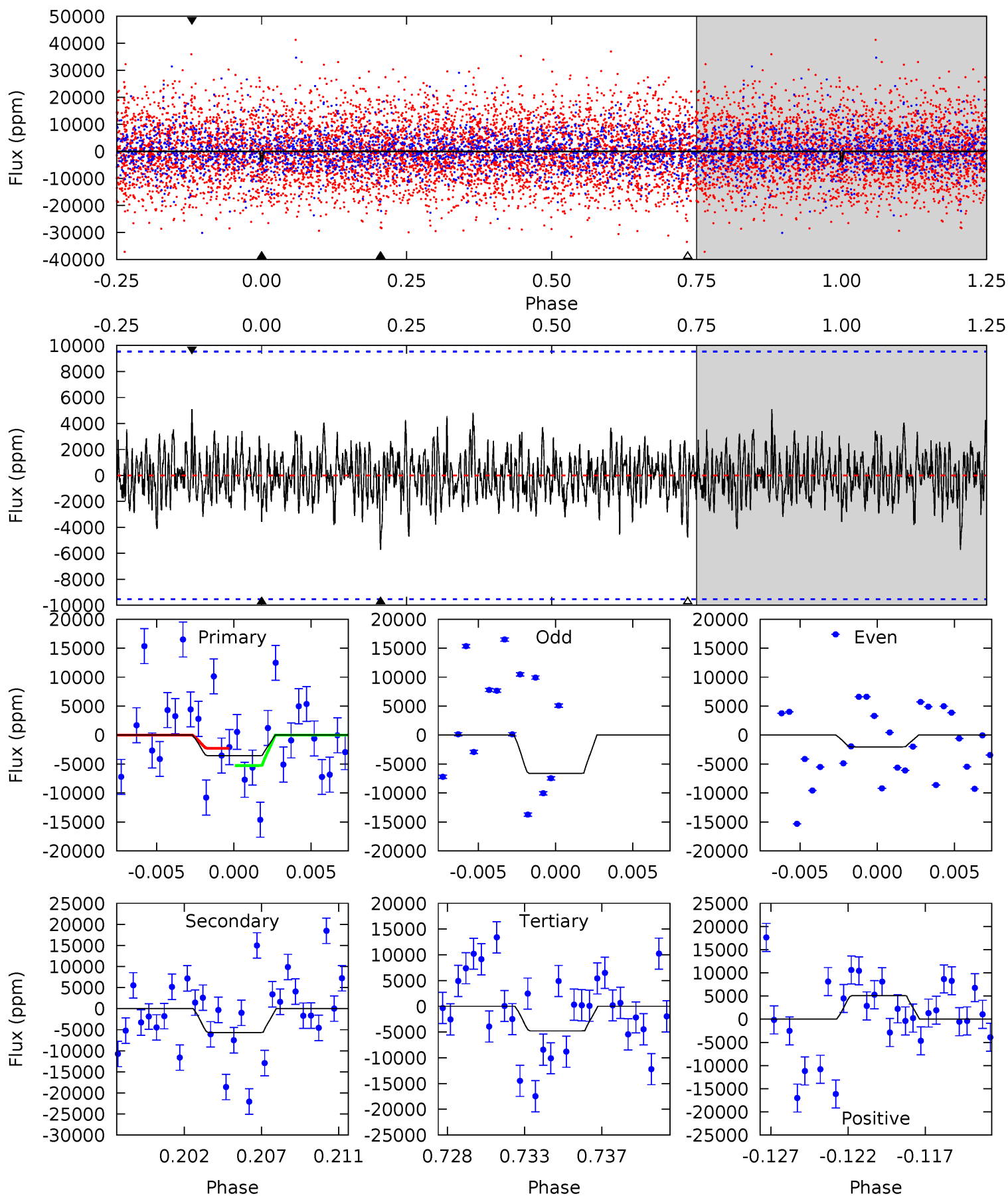
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.93	7.23	6.04	7.03	5.27	3.00	1.93	3.89	2.90	1.19	0.20	2.44	0.98	0.41	0.02



Alt Model-Shift Uniqueness Test

003446471-03, P = 25.762165 Days, E = 117.384963 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1.94	3.08	2.59	2.76	5.17	2.83	0.82	-0.66	-0.83	0.49	0.32	1.18	1.36	0.47	0.81



Stellar Parameters For KIC 003446471

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	7340^{+205}_{-334}	$3.671^{+0.450}_{-0.075}$	$0.070^{+0.200}_{-0.300}$	$3.522^{+0.412}_{-1.753}$	$2.123^{+0.244}_{-0.609}$	$0.068^{+0.293}_{-0.018}$
	+3%/-5%	+12%/-2%	+286%/-429%	+12%/-50%	+11%/-29%	+429%/-26%
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 003446471-03 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-5867 ± 811	$728.64^{+835.24}_{-501.54}$	1751^{+115}_{-198}	-1740^{+4746}_{-543}	$0.276^{+2.444}_{-0.216}$
Alt.	-5681 ± 1844	$724.07^{+859.24}_{-515.04}$	1749^{+118}_{-202}	-1692^{+4770}_{-595}	$0.279^{+3.202}_{-0.223}$

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

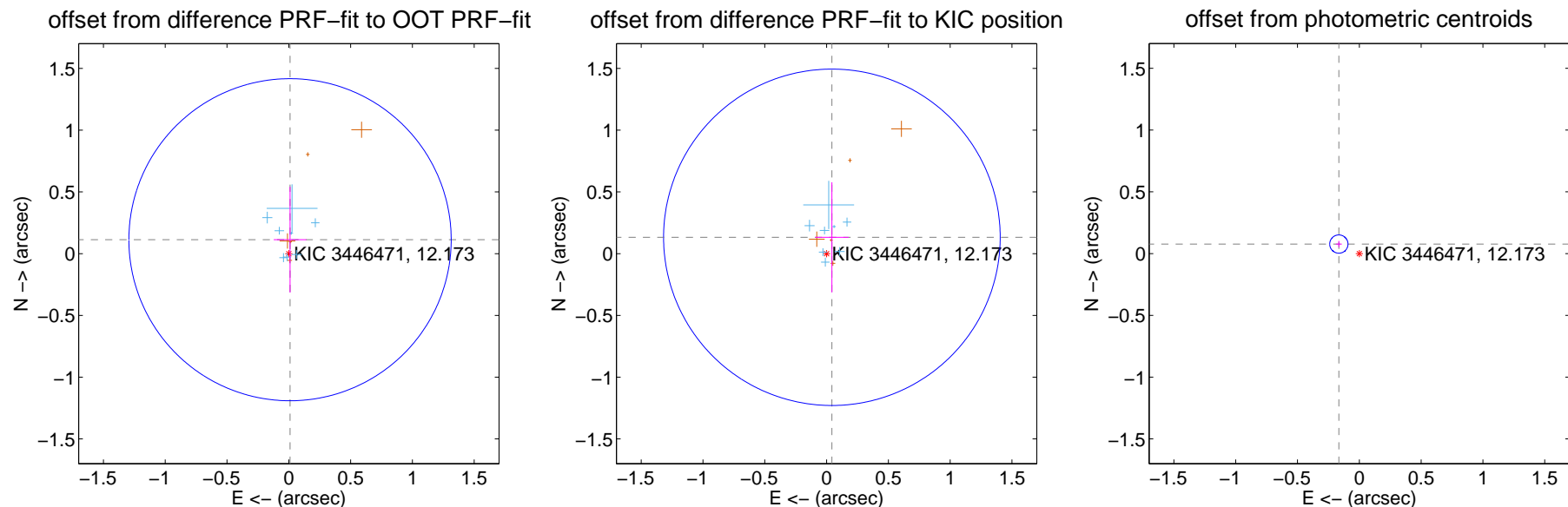
DV Centroid Data

Supplemental centroid analysis for 003446471-03. Kepler magnitude: 12.17. Transit SNR 9.17

There are 9 quarters with good PRF difference image offsets

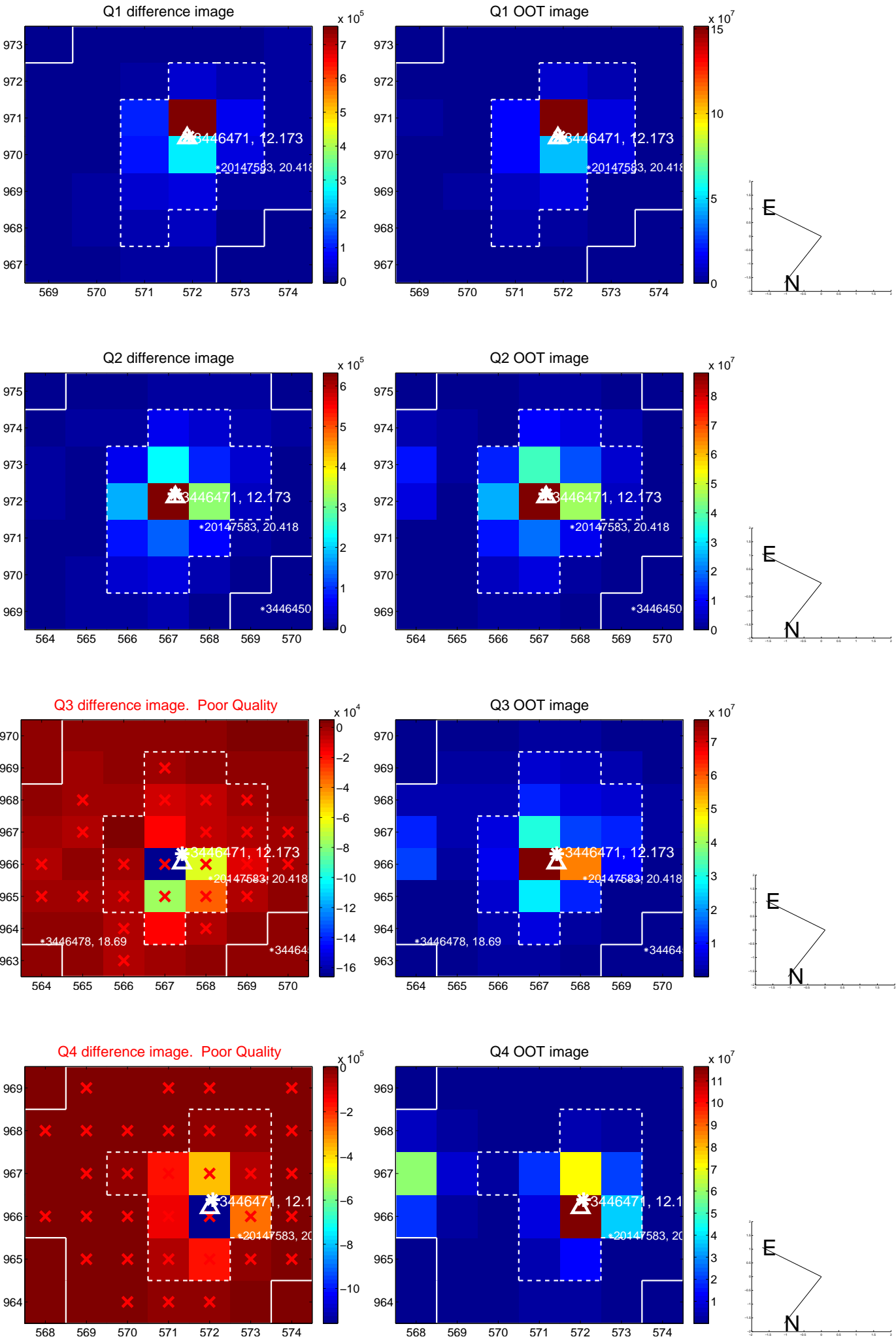
The direct PRF centroid is offset from the target star catalog position by about 0.05 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.113 ± 0.435	0.26	-0.010 ± 0.132	0.113 ± 0.428
PRF-fit source offset from KIC position	0.139 ± 0.454	0.31	-0.043 ± 0.135	0.132 ± 0.446
photometric centroid source offset	0.18 ± 0.02	7.41	0.17 ± 0.02	0.08 ± 0.03

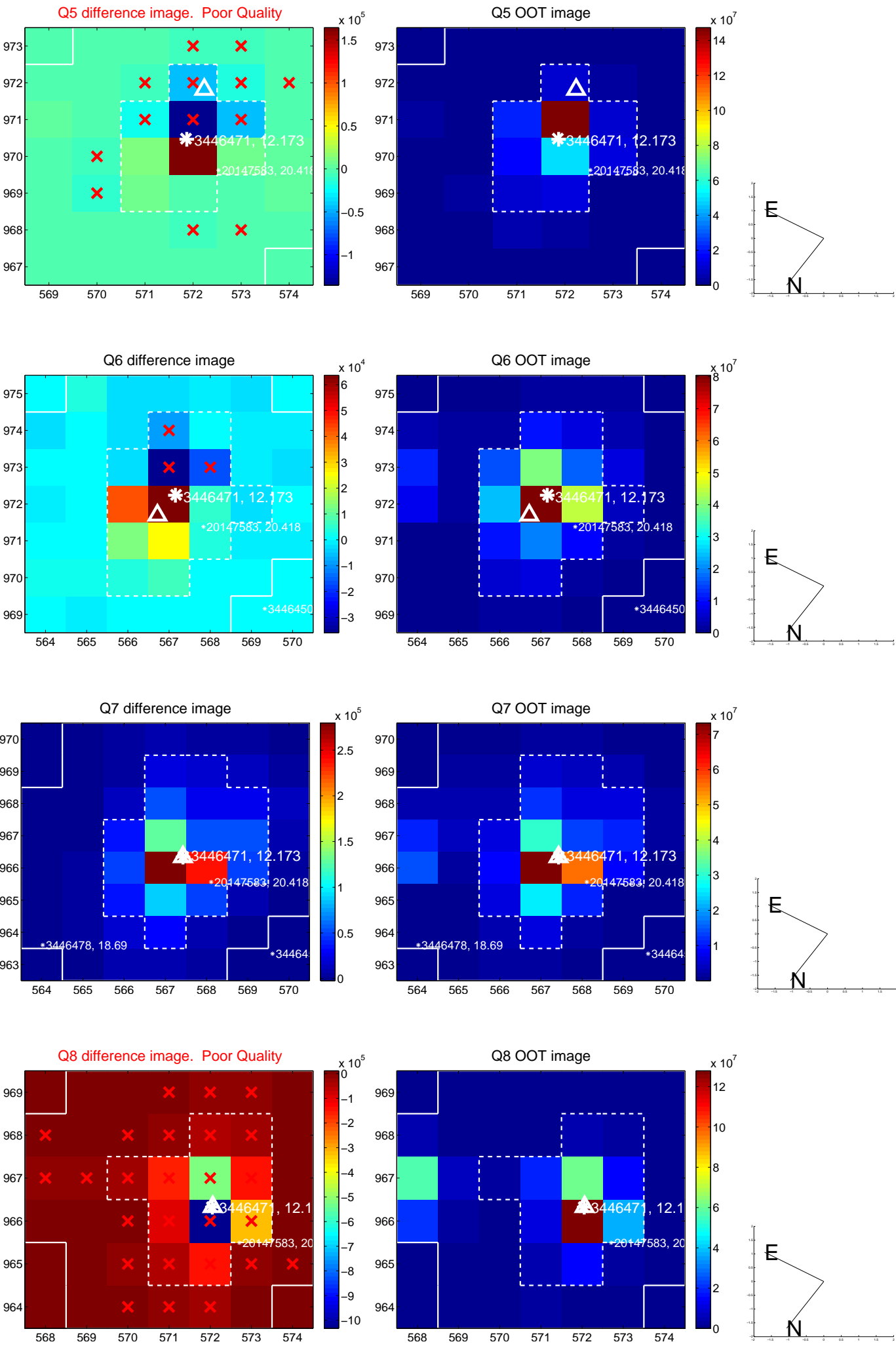


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

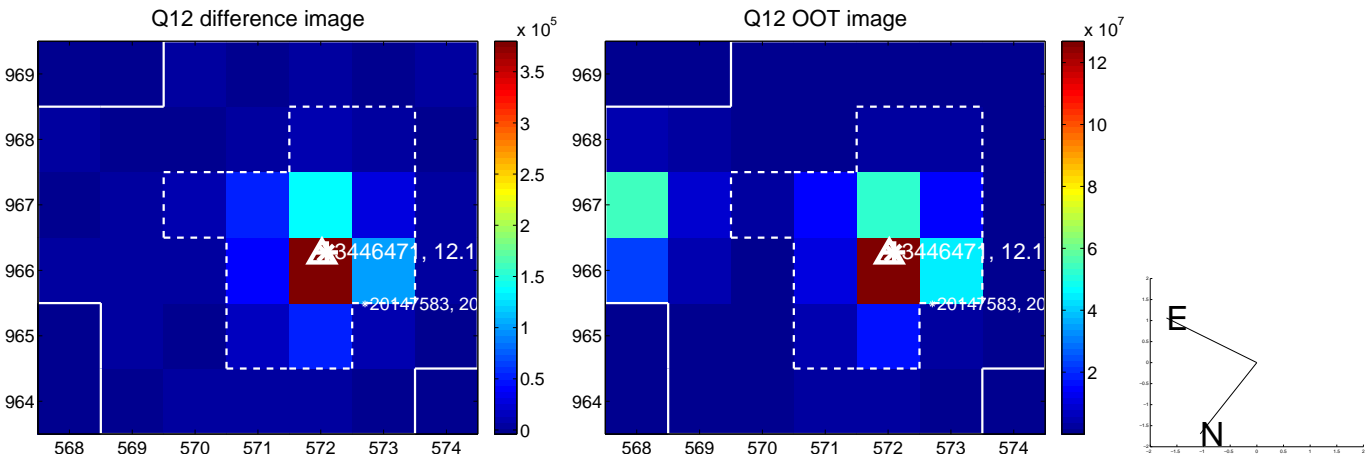
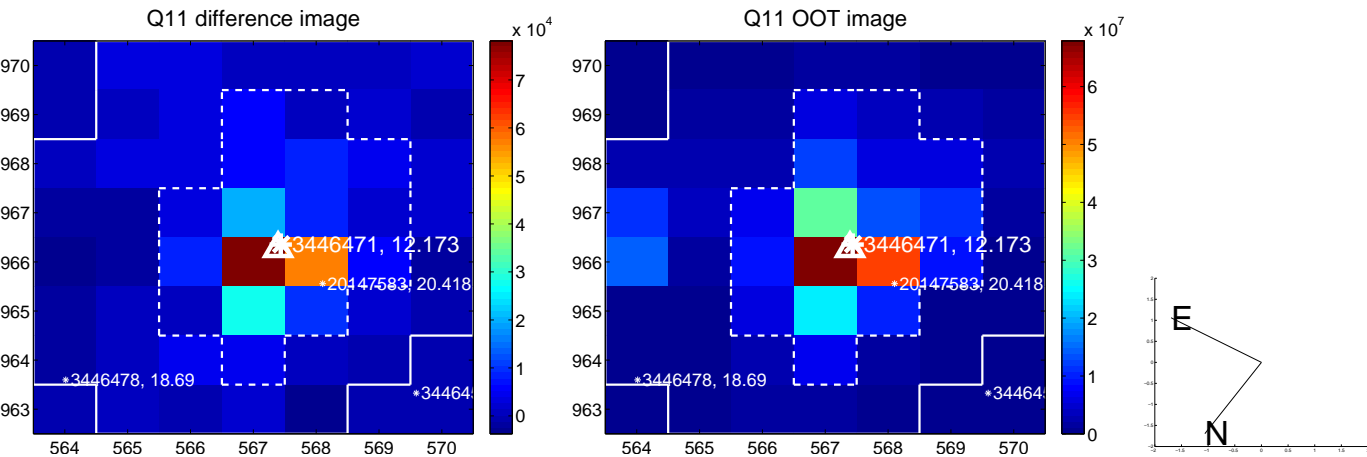
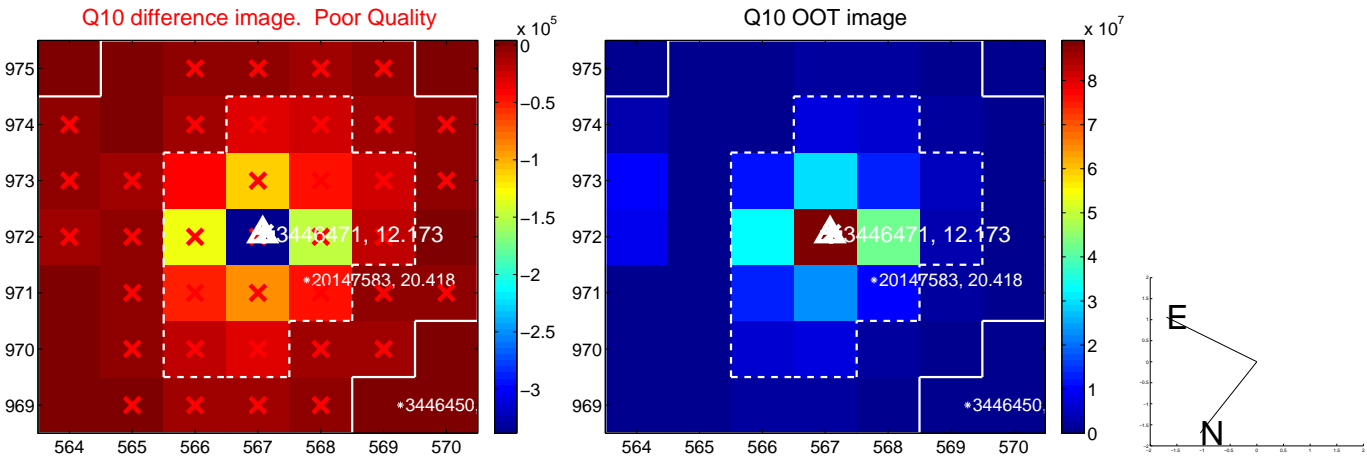
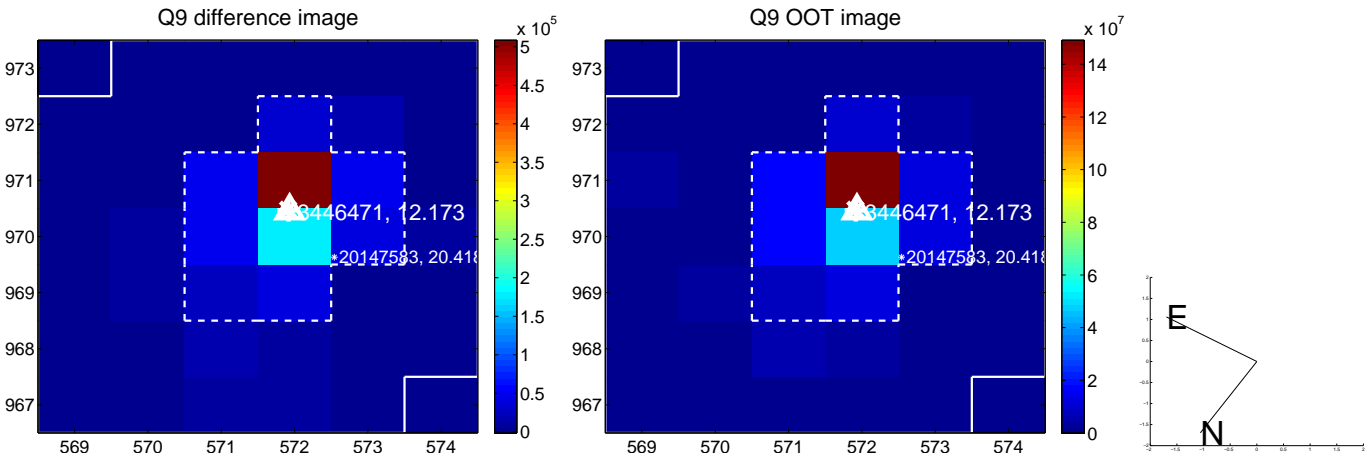
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



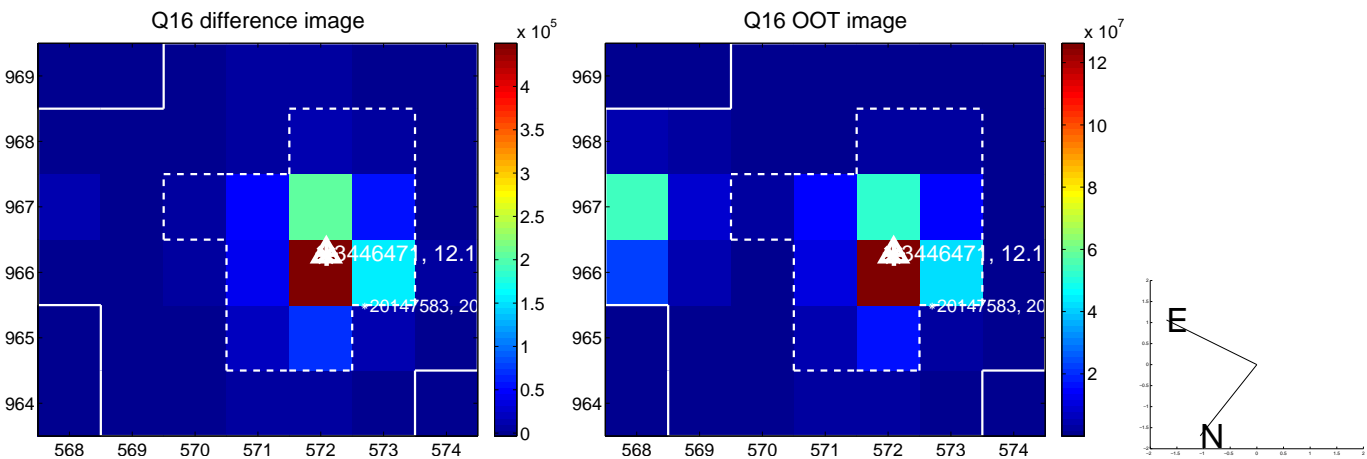
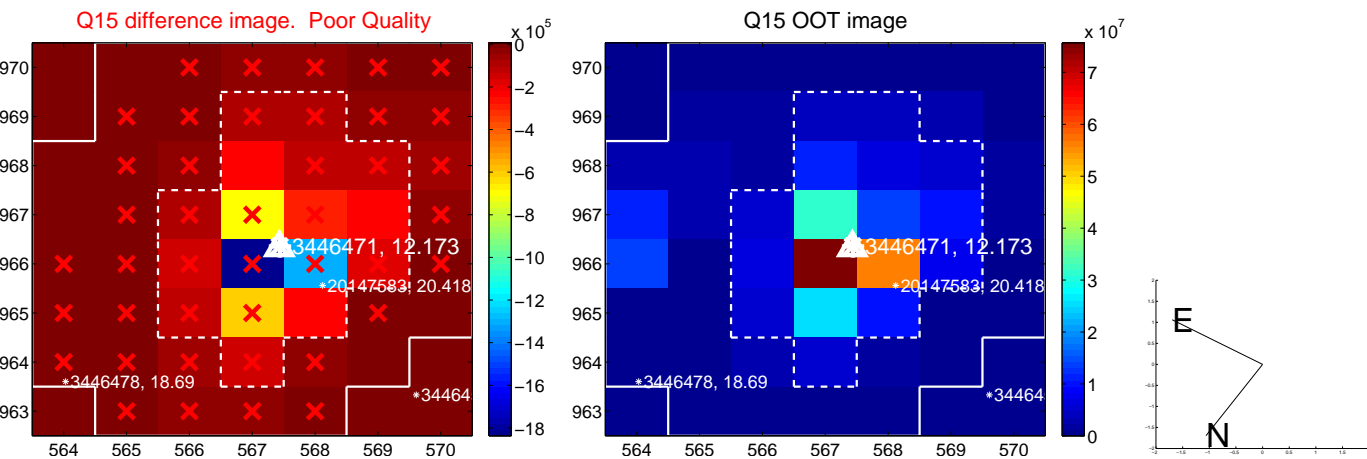
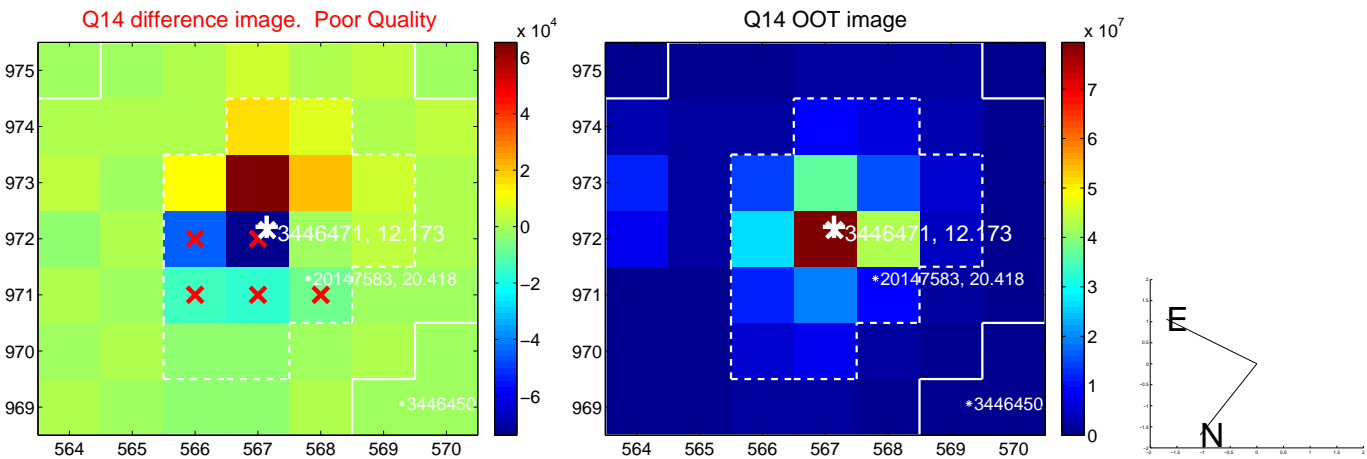
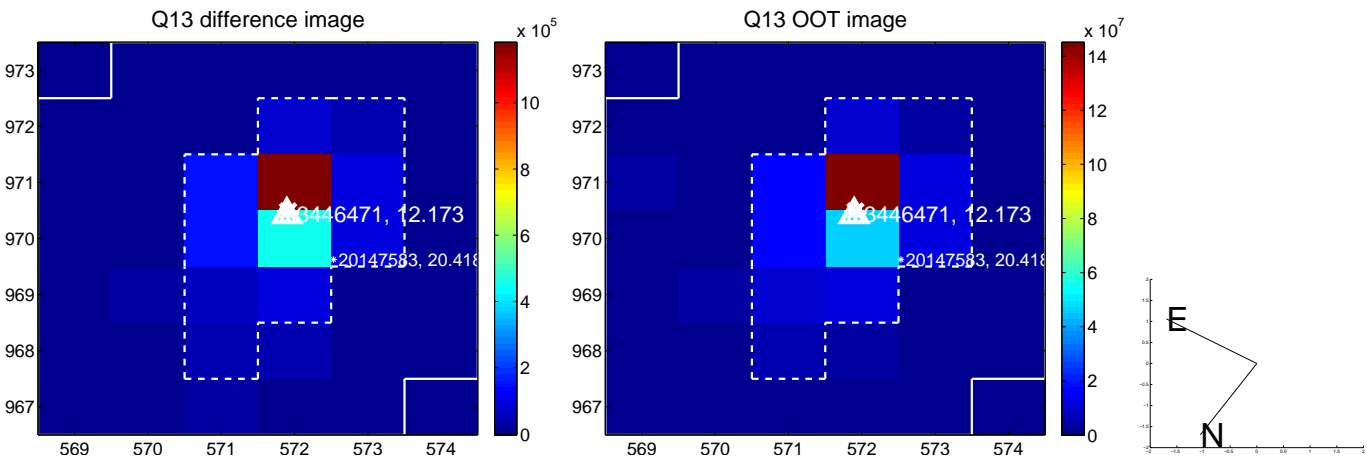
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



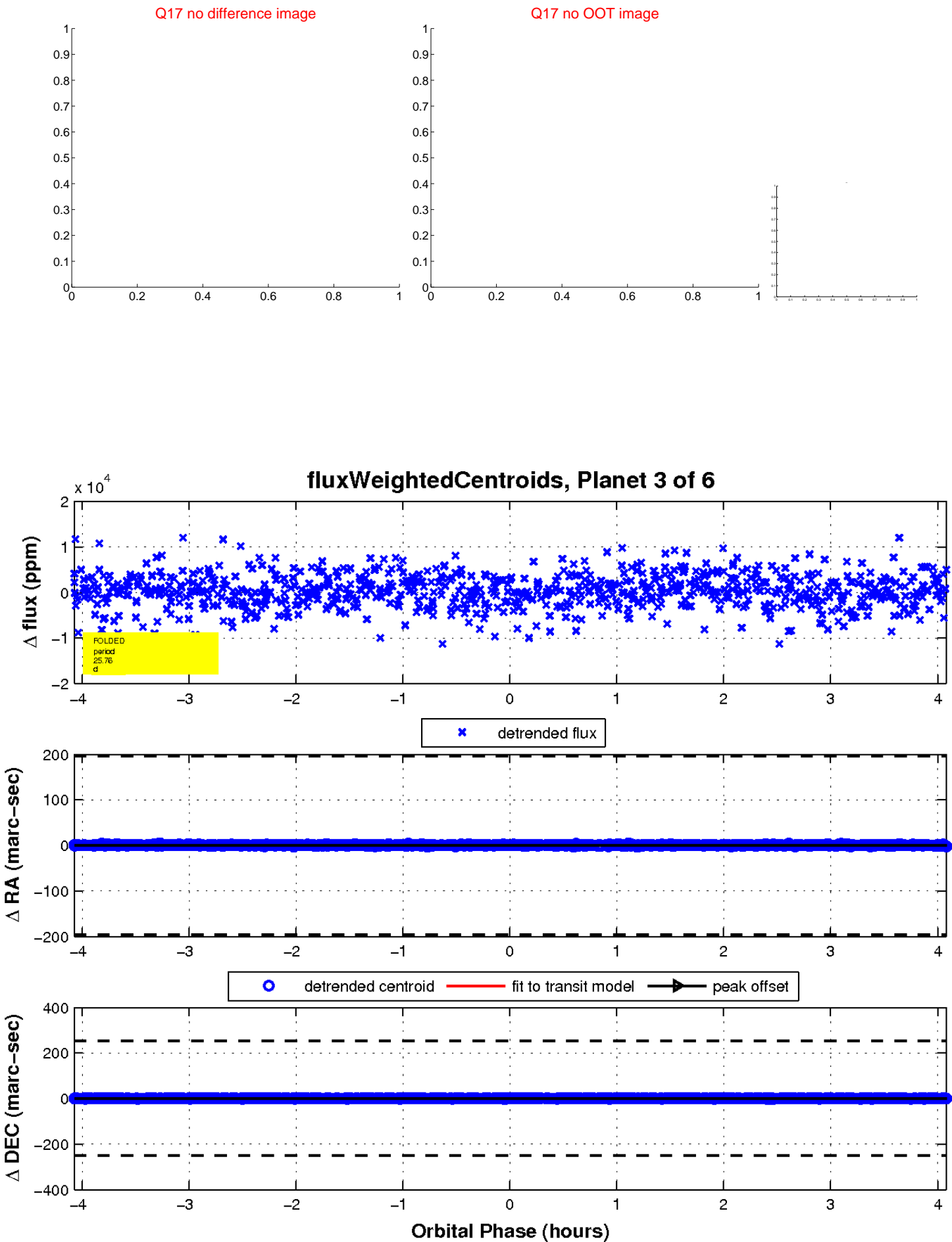
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

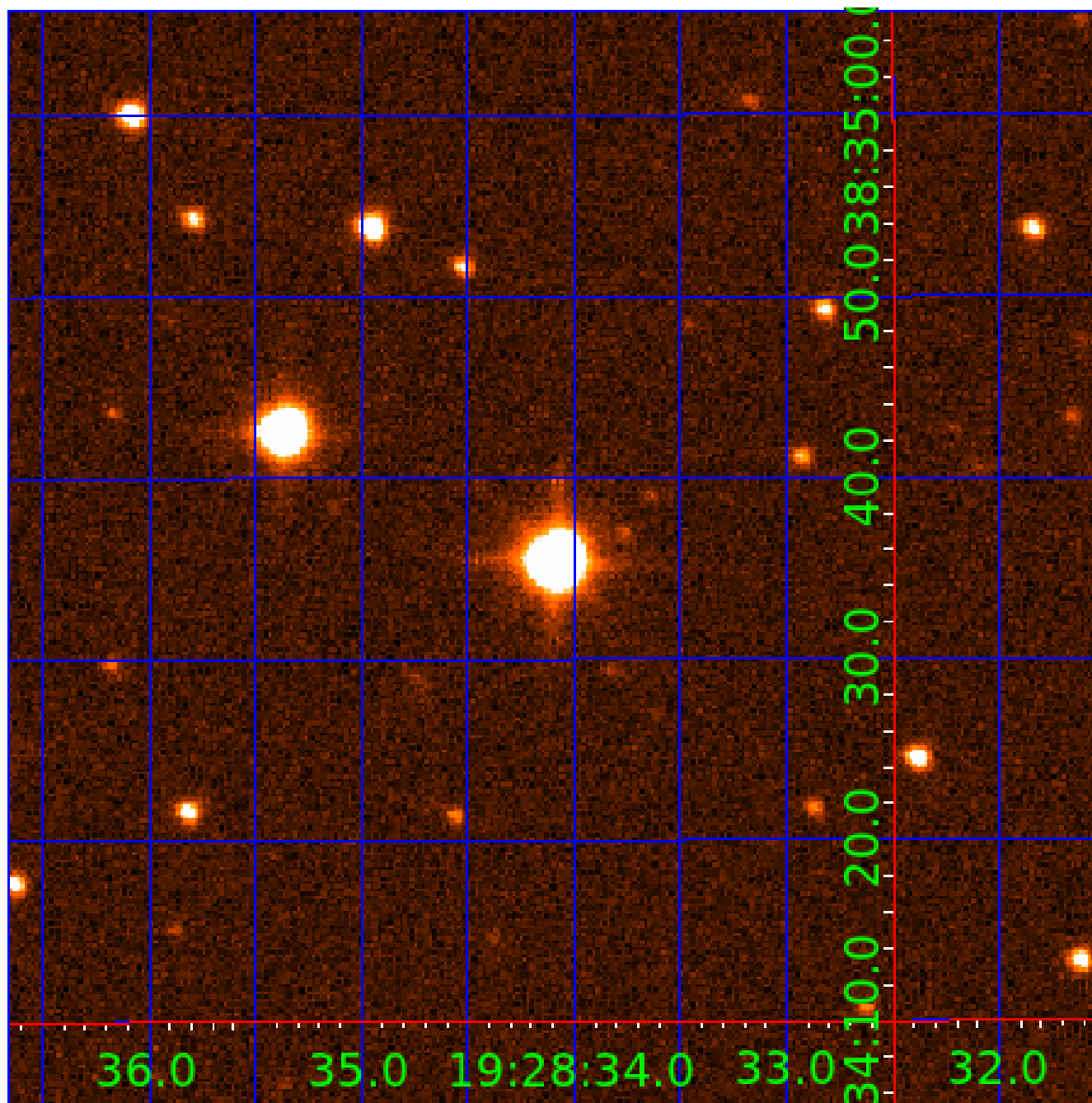


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 003446471

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})
003446471-01	OBS	No	1.032043	132.335455	442.4	6.943	10.2	13.6	3.52	7340	9.09	48896.10
003446471-02	OBS	No	0.746716	131.695923	1881.9	1.178	12.5	18.9	3.52	7340	15.69	75277.38
003446471-03	OBS	No	25.762100	143.172884	8121.5	1.362	8.8	9.2	3.52	7340	56.94	670.24
003446471-04	OBS	No	32.665761	146.287867	4836.2	1.711	8.2	8.8	3.52	7340	26.33	488.37
003446471-05	OBS	No	49.048118	145.173786	5492.5	1.655	7.7	8.6	3.52	7340	28.02	284.04
003446471-06	OBS	No	31.954637	143.557285	3468.9	2.615	7.7	7.1	3.52	7340	21.27	502.91

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003446471-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT
003446471-02	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT
003446471-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
003446471-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
003446471-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
003446471-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT

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

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

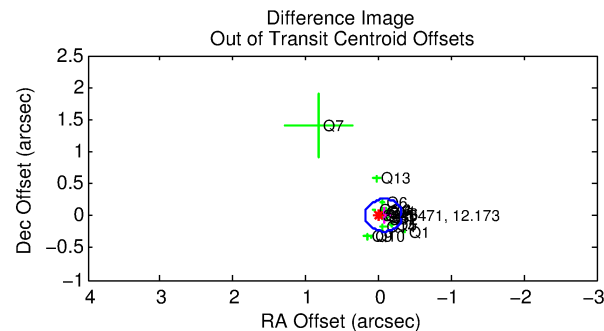
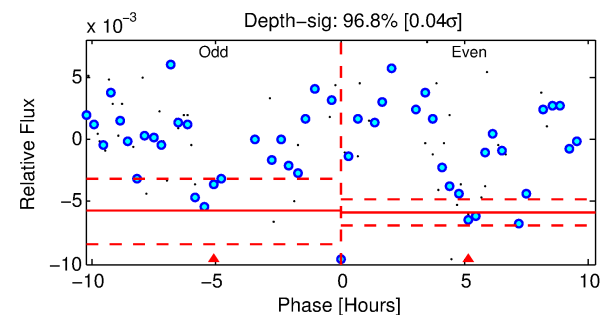
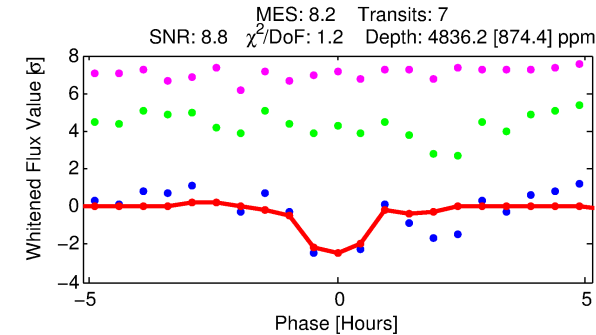
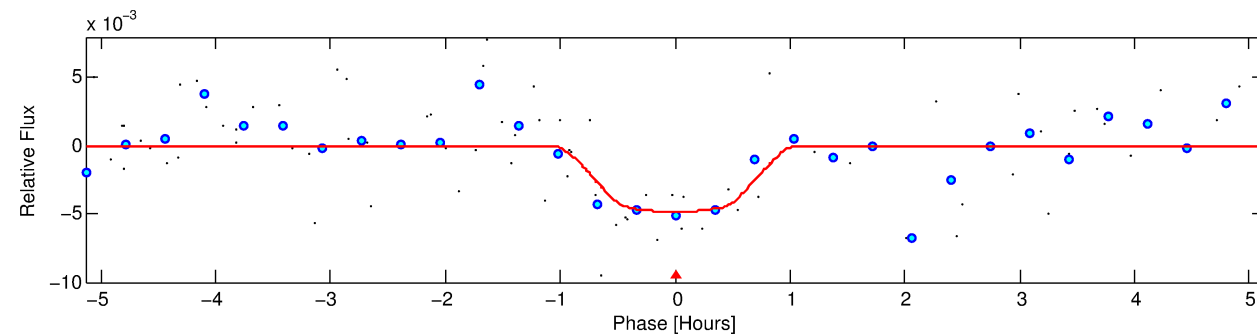
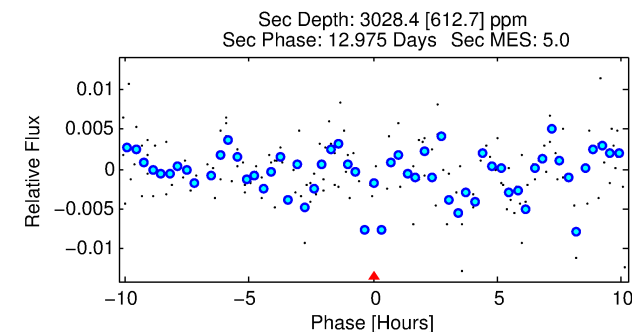
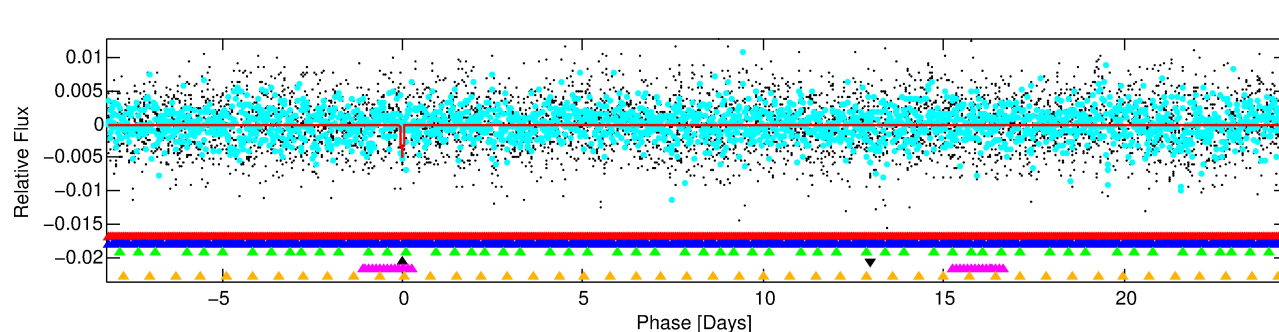
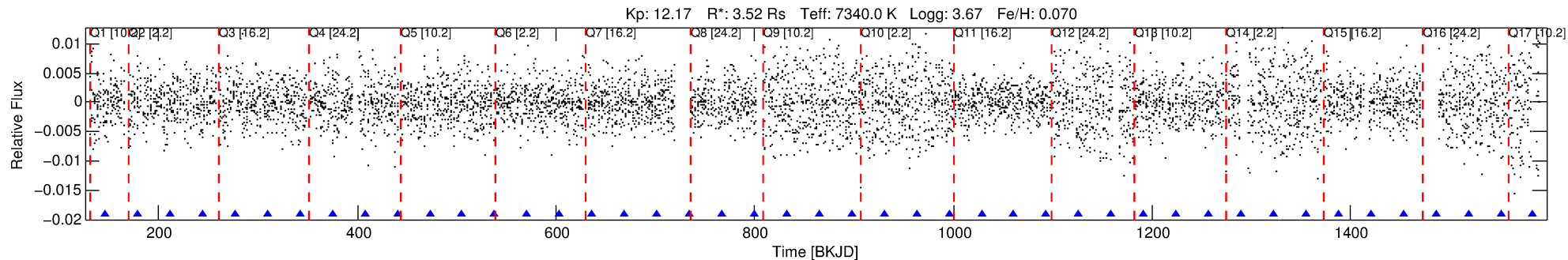
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003446471-04

No Significant Match Found

DV One-Page Summary

KIC: 3446471 Candidate: 4 of 6 Period: 32.666 d



DV Fit Results:

Period = 32.66576 [0.00028] d
Epoch = 146.2879 [0.0066] BKJD
Rp/R* = 0.0685 [0.0391]
a/R* = 117.87 [359.17]
b = 0.70 [2.26]
Seff = 488.37 [384.67]
Teq = 1199 [236] K
Rp = 26.33 [19.93] Re
a = 0.2570 [0.1231] AU
Ag = 158.73 [220.47] [0.72σ]
Teff = 6578 [1929] K [2.77σ]

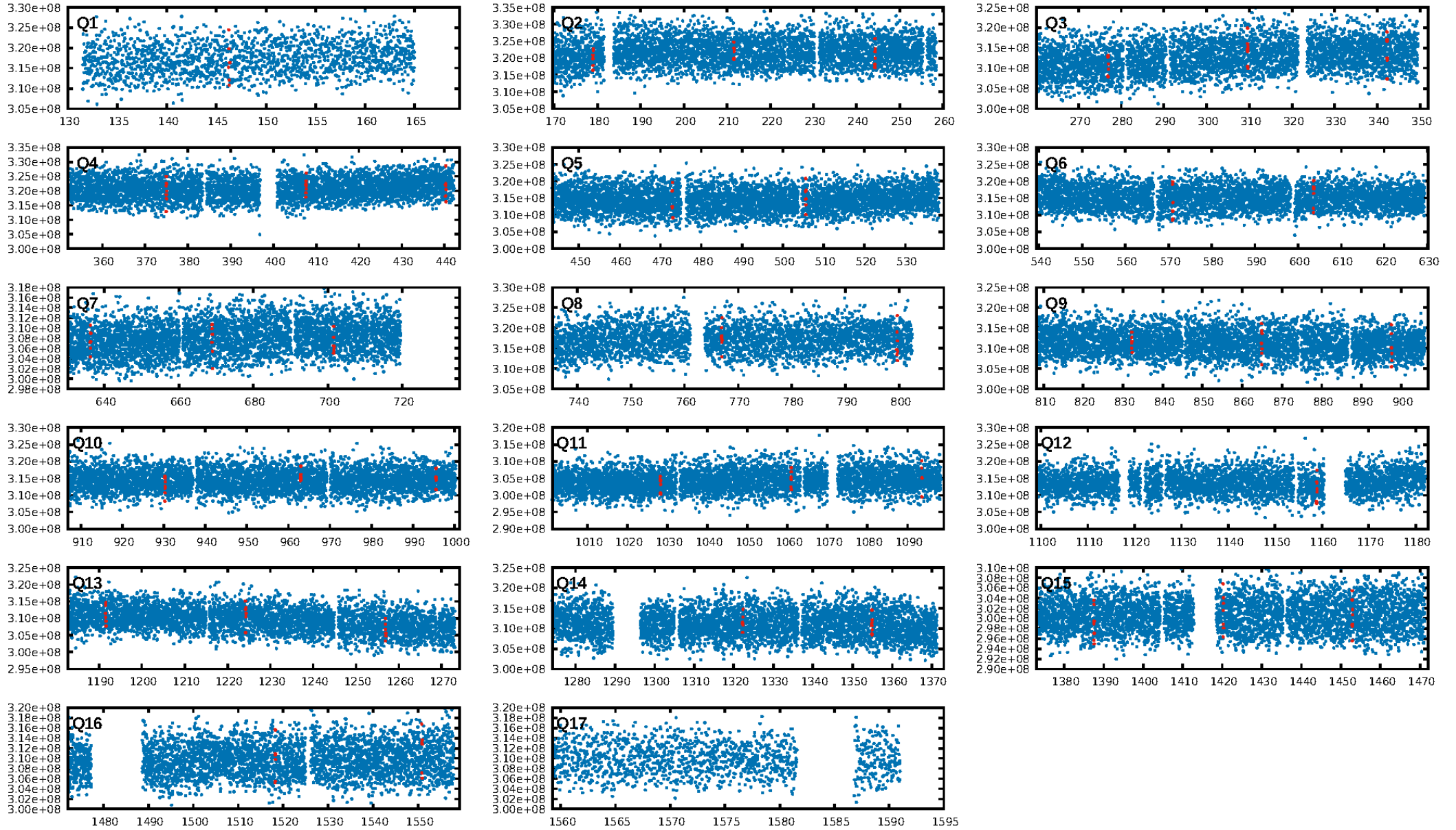
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [5.46σ]
LongPeriod-sig: 100.0% [165.19σ]
ModelChiSquare2-sig: 59.6%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 5.41e-09
RollingBand-fgt: 1.00 [6/6]
GhostDiagnostic-chr: -1.653
Centroid-sig: 90.6%
Centroid-so: 0.200 arcsec [5.46σ]
OotOffset-rm: 0.071 arcsec [0.84σ]
OotOffset-st: 4/4/4/4 [16]
KicOffset-rm: 0.074 arcsec [0.66σ]
KicOffset-st: 4/4/4/4 [16]
DiffImageQuality-fgm: 0.44 [7/16]
DiffImageOverlap-fno: 0.25 [4/16]

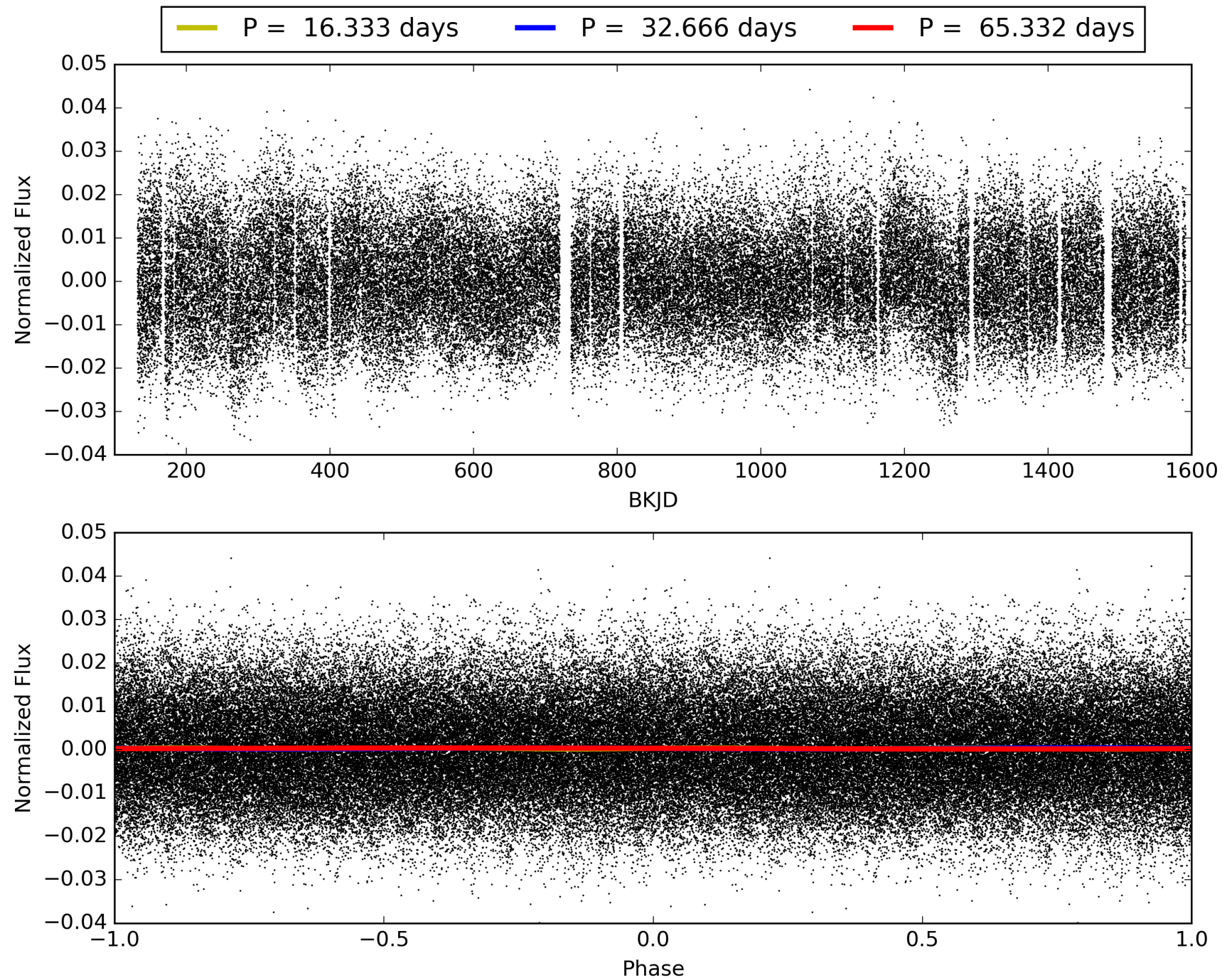
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 06:34:33 Z

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

TCE 003446471-04, PDC Light Curves

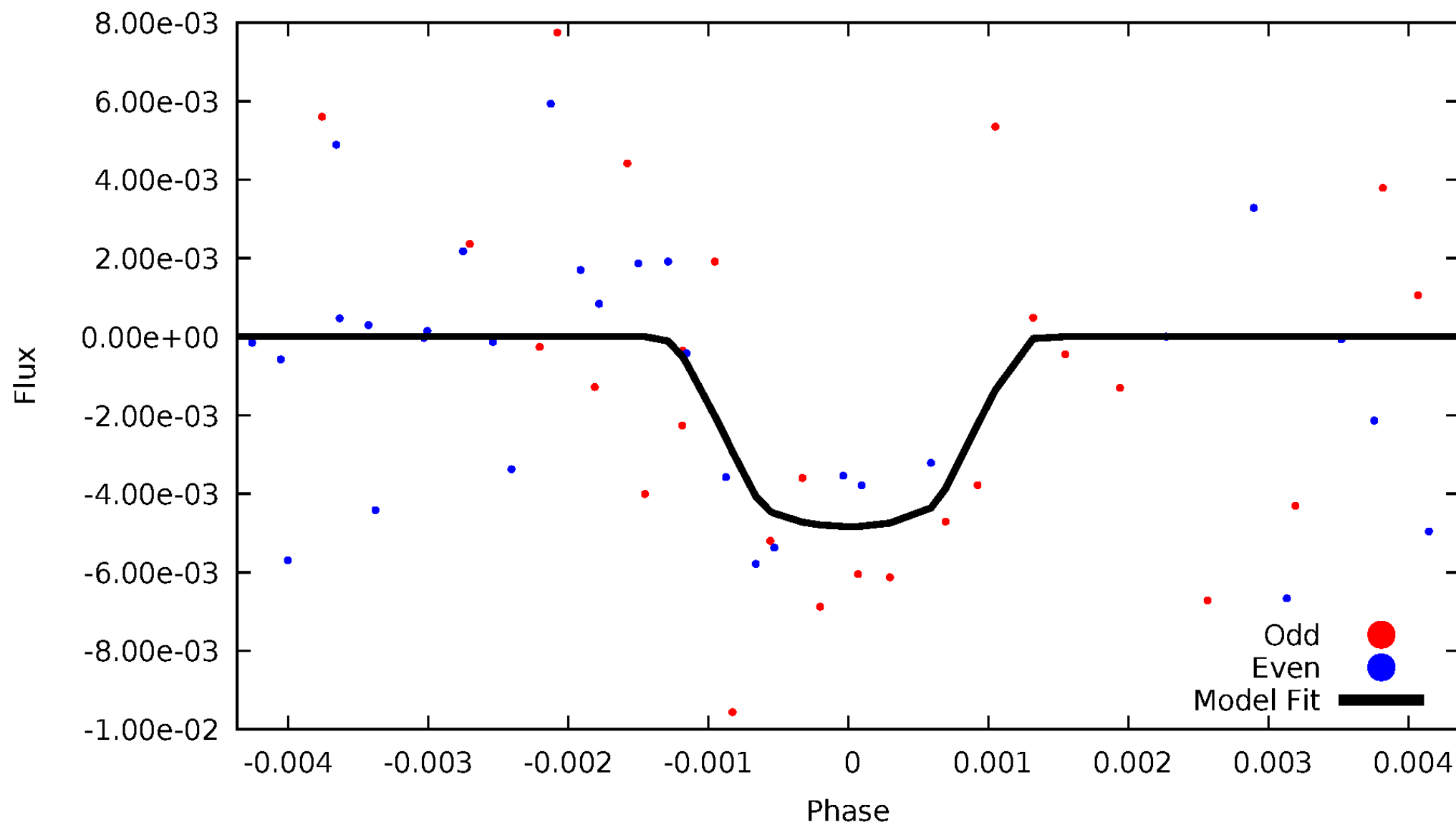


TCE 003446471-04



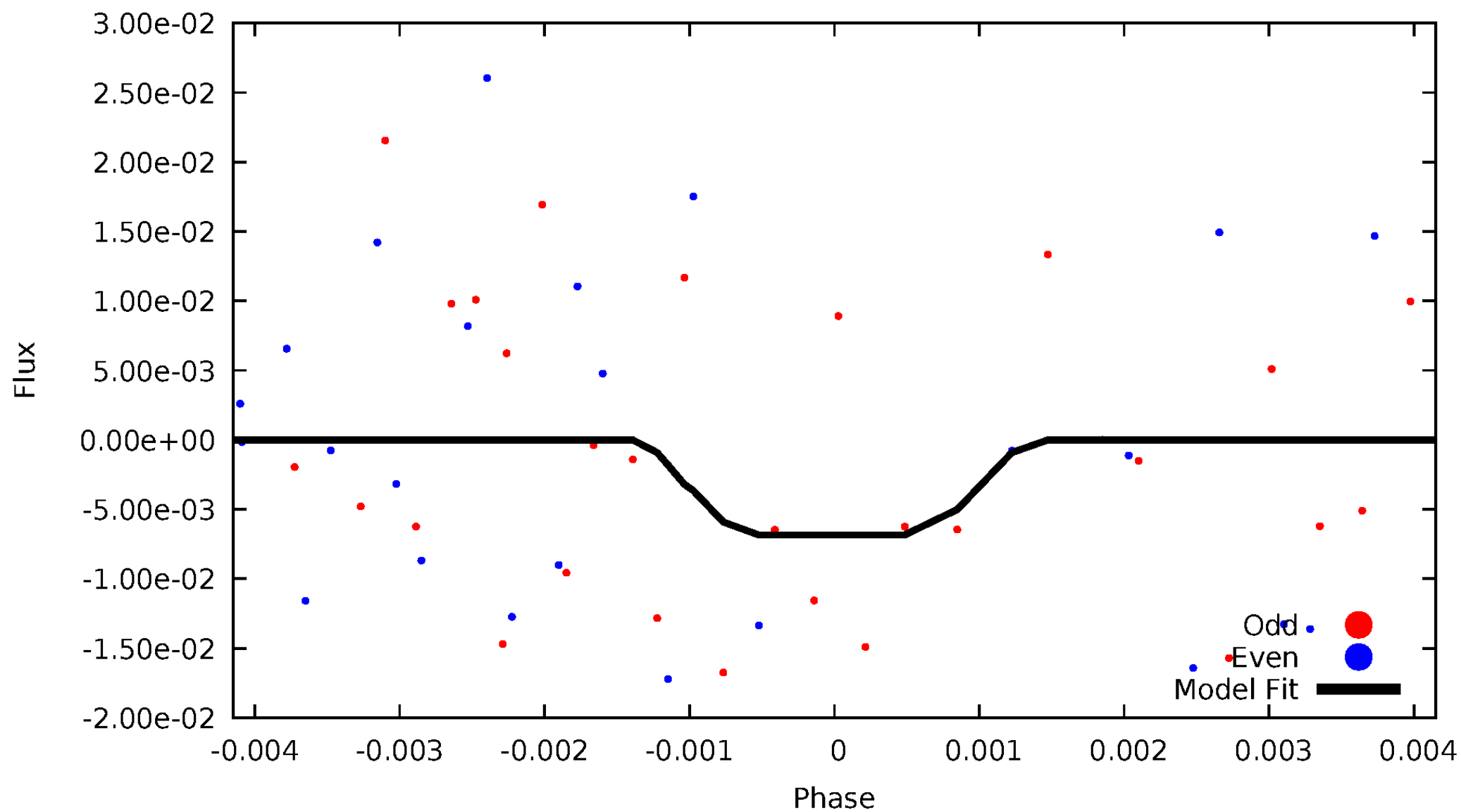
DV Odd/Even

TCE 003446471-04



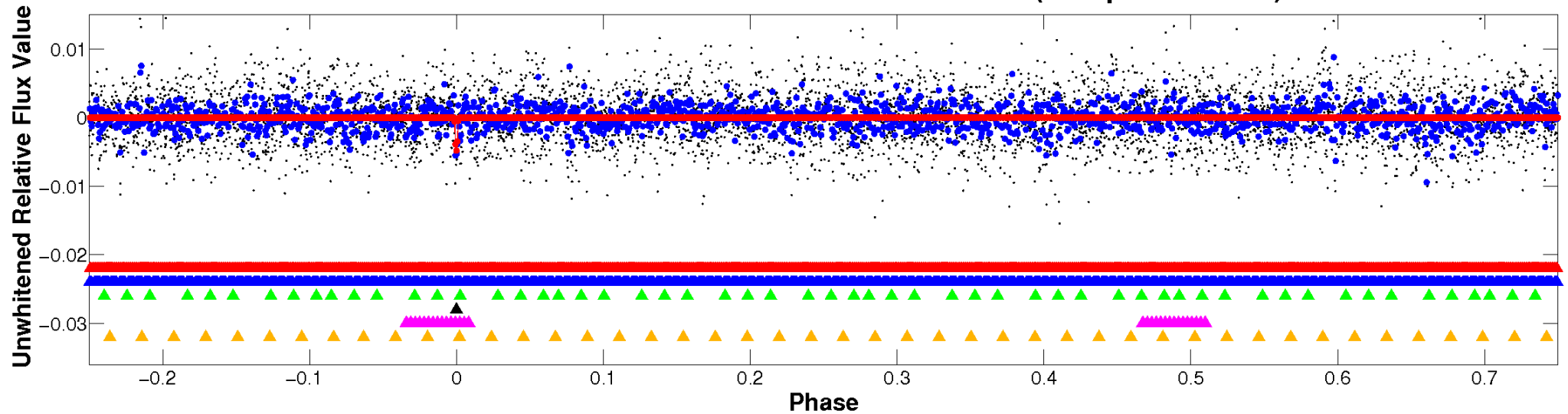
ALT Odd/Even

TCE 003446471-04

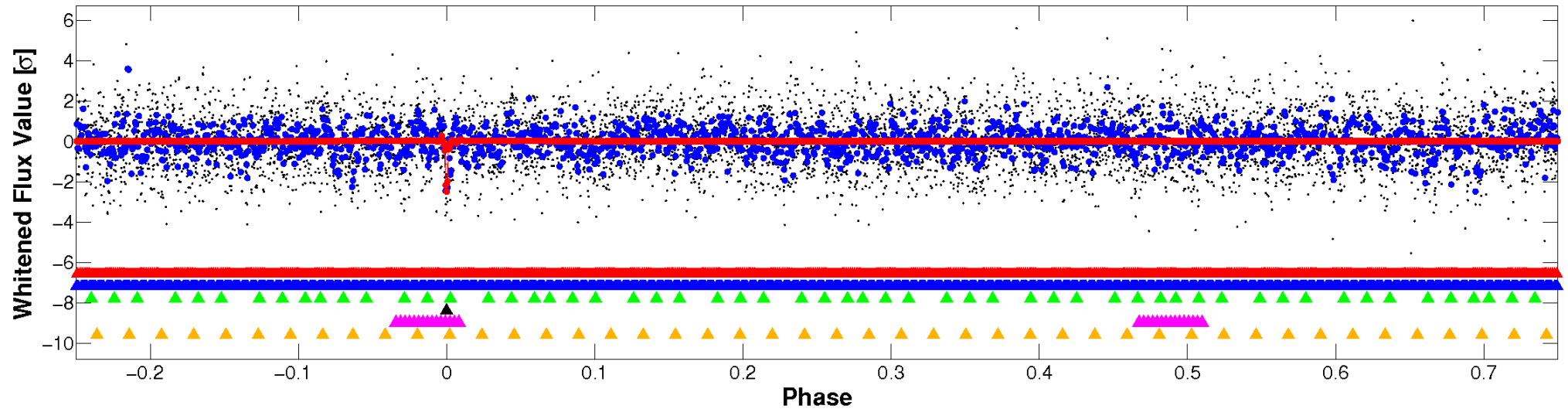


Non-Whitened Vs. Whitened Light Curve

Planet 4 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

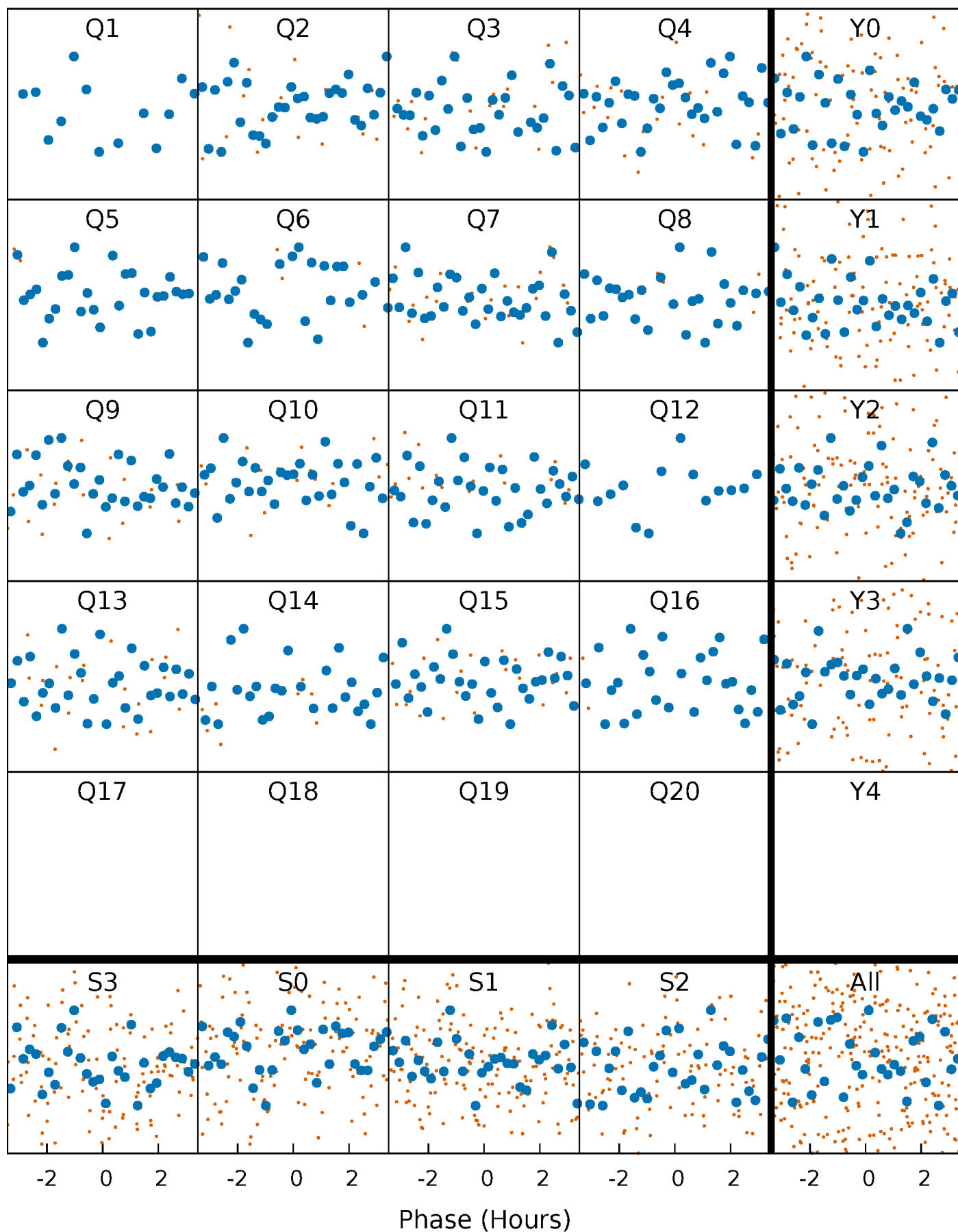


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



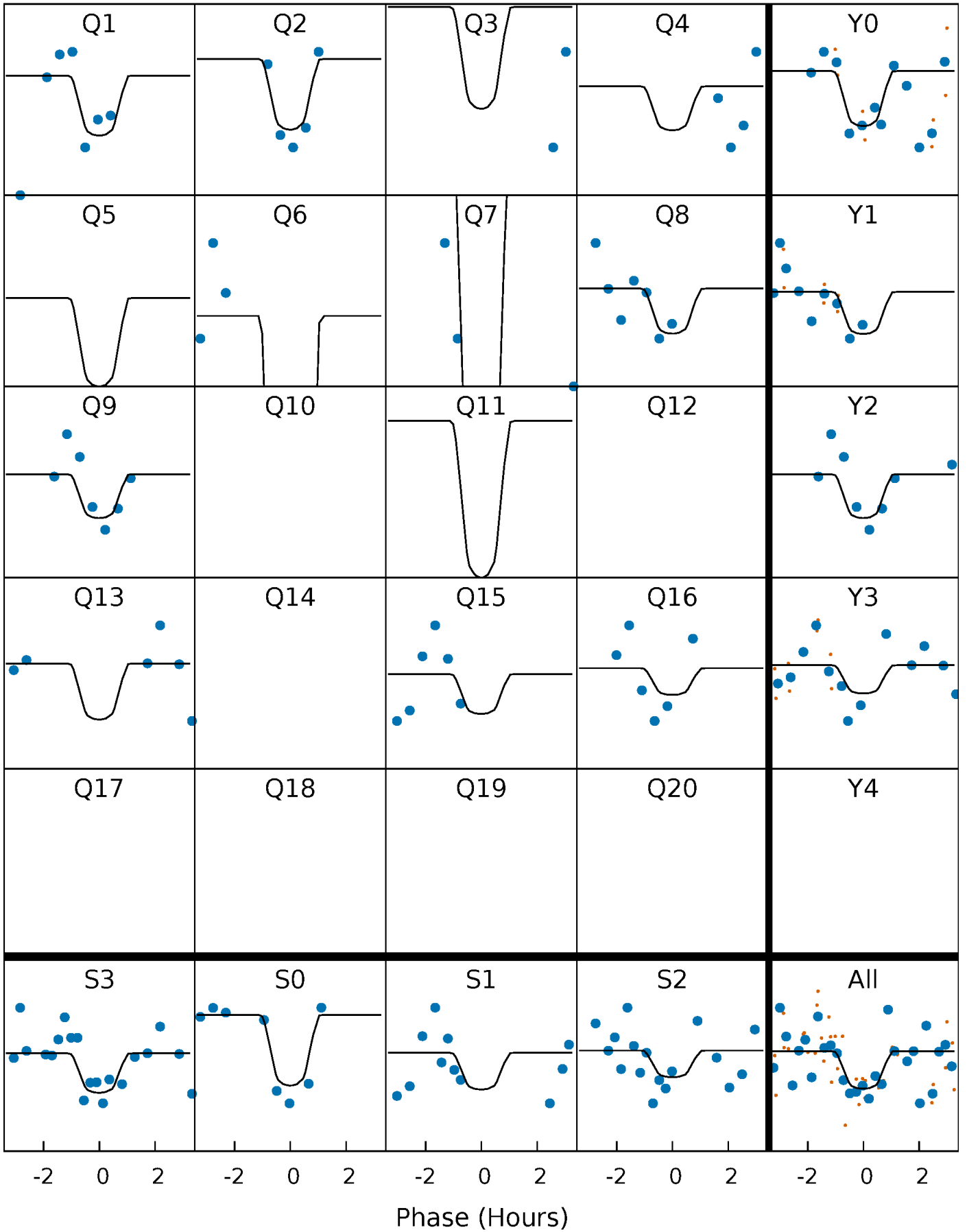
PDC Quarter-Phased Transit Curves

TCE 003446471-04 P= 32.665761 Days $T_0=146.287867$ (BKJD)



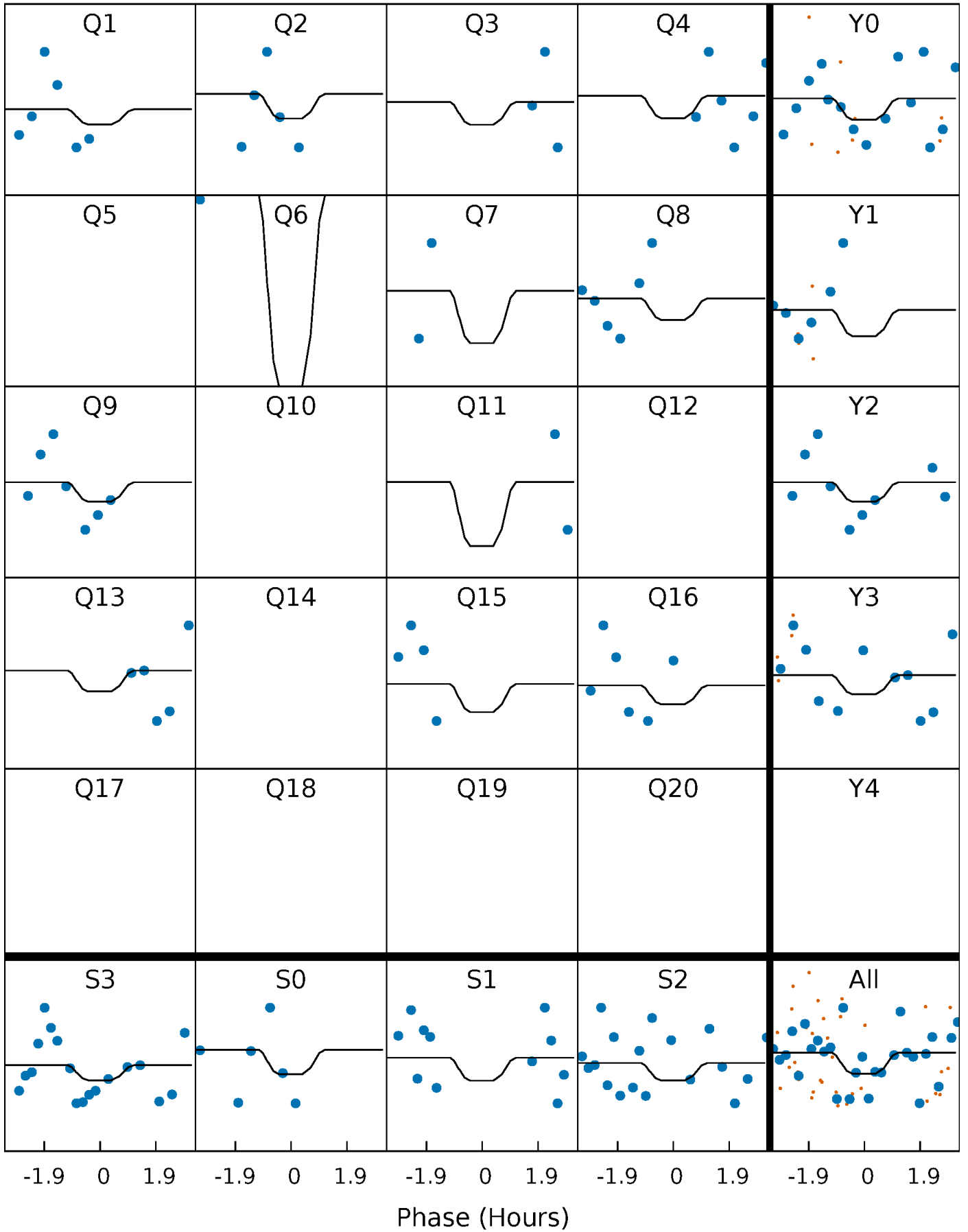
DV Quarter-Phased Transit Curves

TCE 003446471-04 P= 32.665761 Days $T_0=146.287867$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

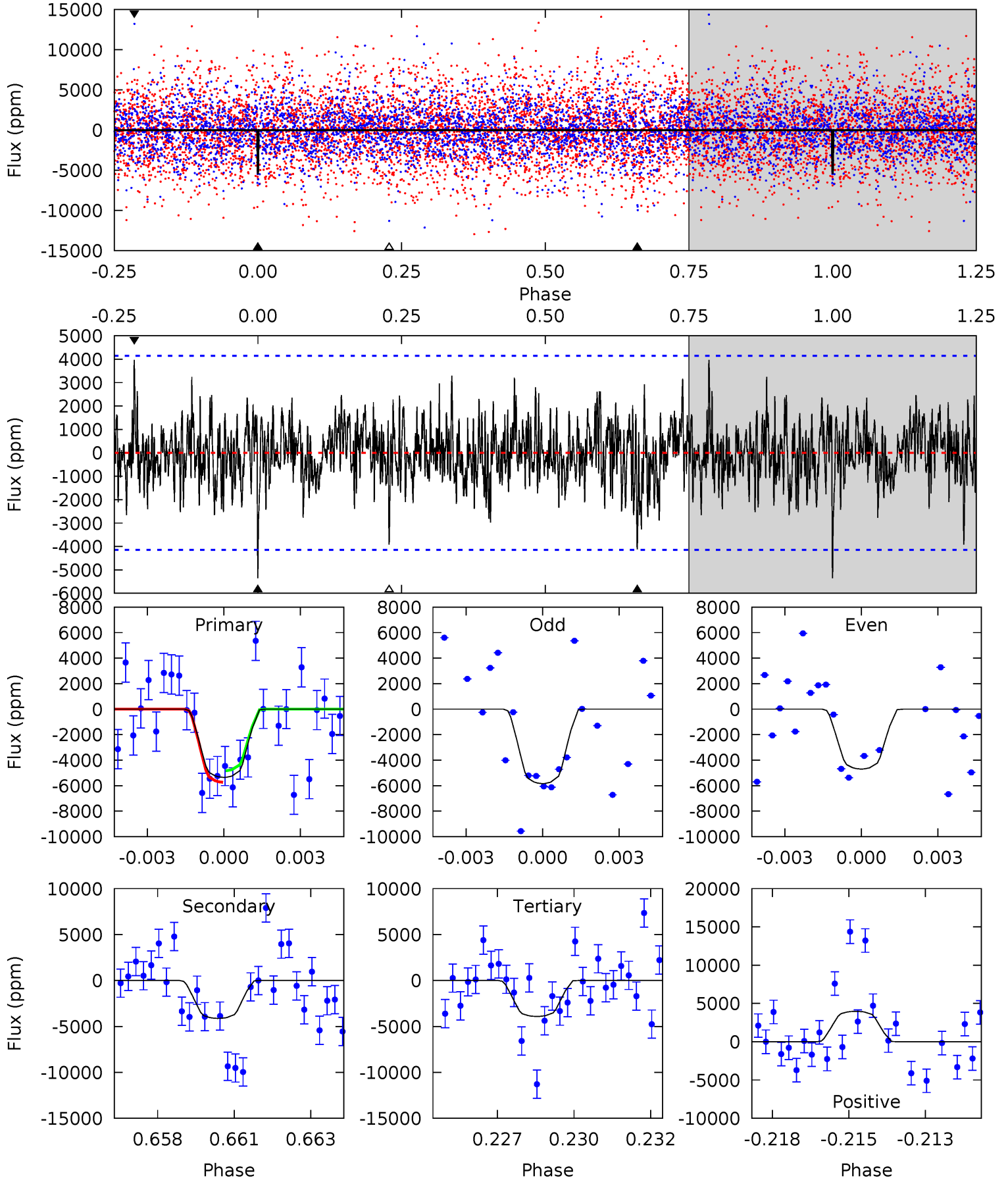
TCE 003446471-04 P= 32.665693 Days $T_0=146.324185$ (BKJD)



DV Model-Shift Uniqueness Test

003446471-04, P = 32.665761 Days, E = 113.622106 Days

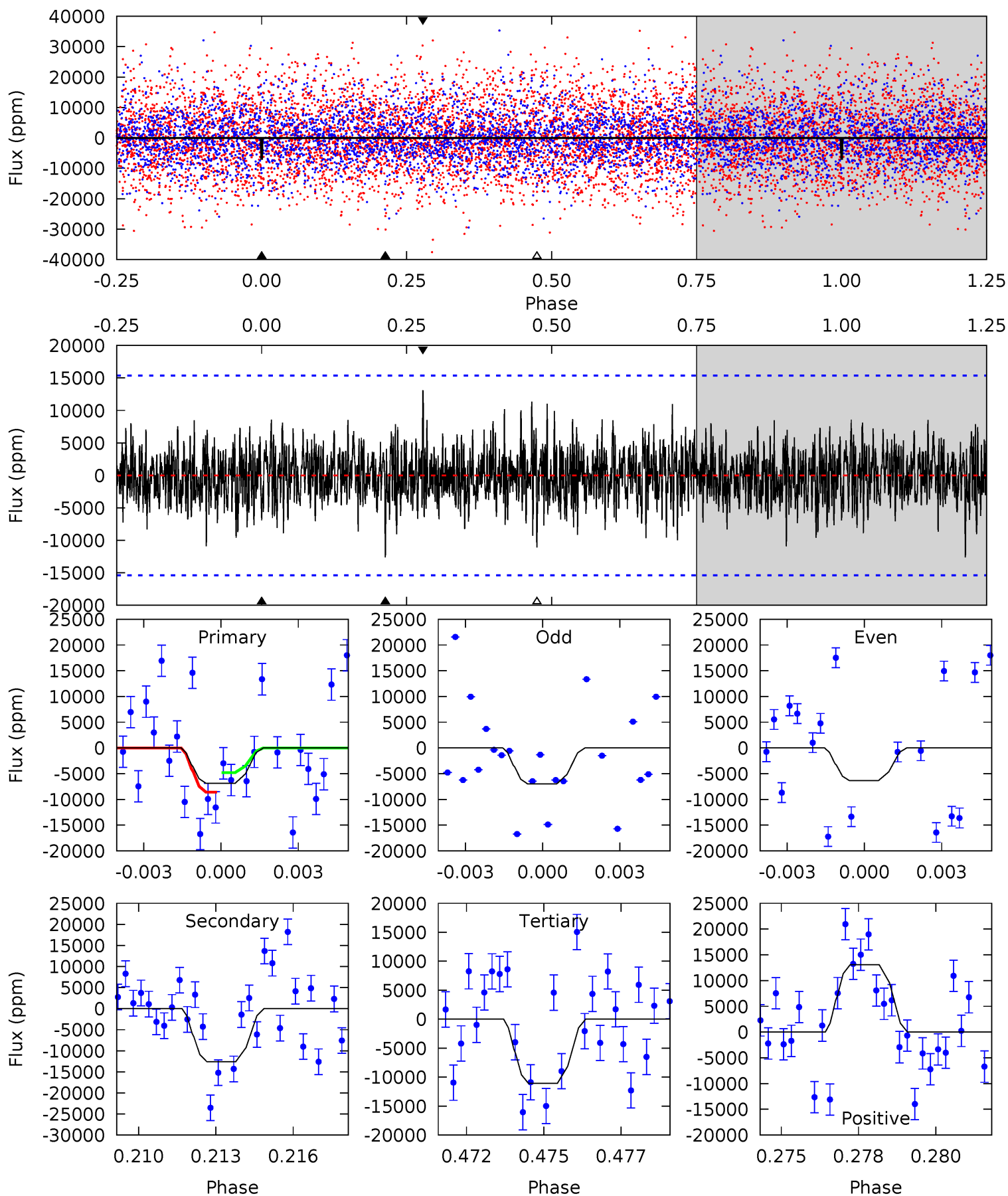
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.79	5.24	4.97	5.04	5.26	2.99	1.36	1.82	1.75	0.27	0.20	0.70	1.16	0.43	0.56



Alt Model-Shift Uniqueness Test

003446471-04, P = 32.665693 Days, E = 113.658492 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.36	4.32	3.80	4.49	5.27	3.00	1.14	-1.44	-2.12	0.52	-0.17	0.11	0.76	0.51	0.65



Stellar Parameters For KIC 003446471

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	7340^{+205}_{-334}	$3.671^{+0.450}_{-0.075}$	$0.070^{+0.200}_{-0.300}$	$3.522^{+0.412}_{-1.753}$	$2.123^{+0.244}_{-0.609}$	$0.068^{+0.293}_{-0.018}$
	+3%/-5%	+12%/-2%	+286%/-429%	+12%/-50%	+11%/-29%	+429%/-26%
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 003446471-04 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-4125 ± 788	$22.65^{+15.17}_{-11.58}$	1615^{+111}_{-195}	6995^{+4326}_{-1480}	280^{+891}_{-183}
Alt.	-12594 ± 2917	$28.97^{+16.07}_{-13.68}$	1613^{+112}_{-181}	8493^{+5197}_{-1707}	524^{+1421}_{-308}

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

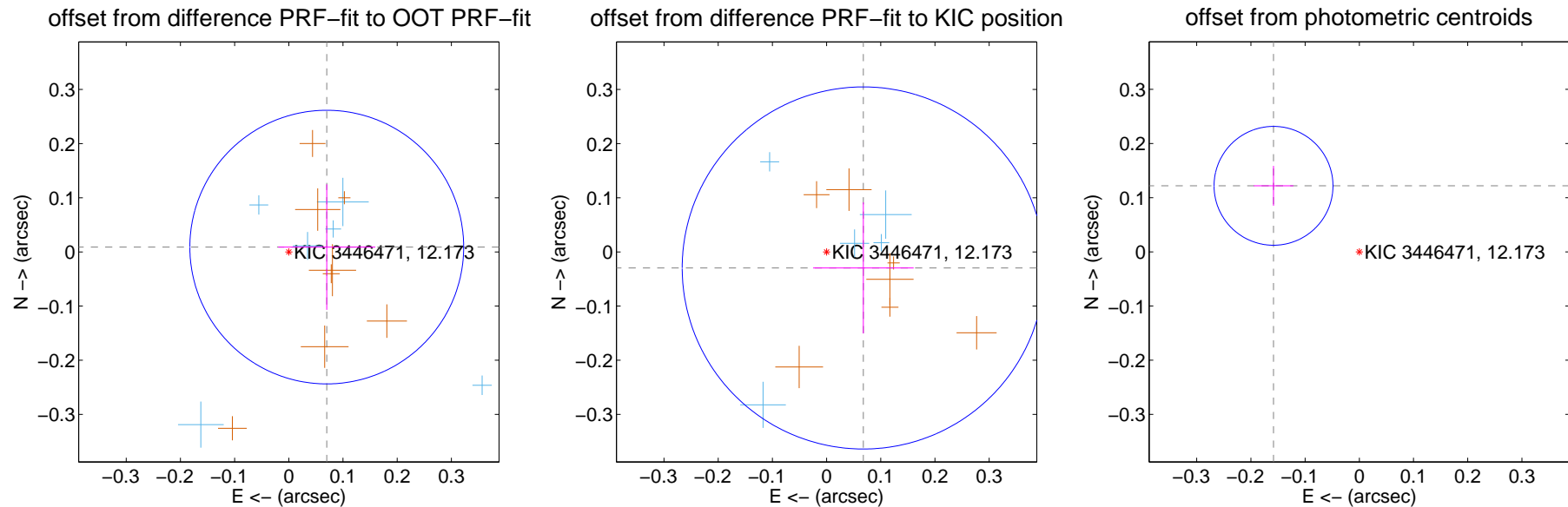
DV Centroid Data

Supplemental centroid analysis for 003446471-04. Kepler magnitude: 12.17. Transit SNR 8.84

There are 7 quarters with good PRF difference image offsets

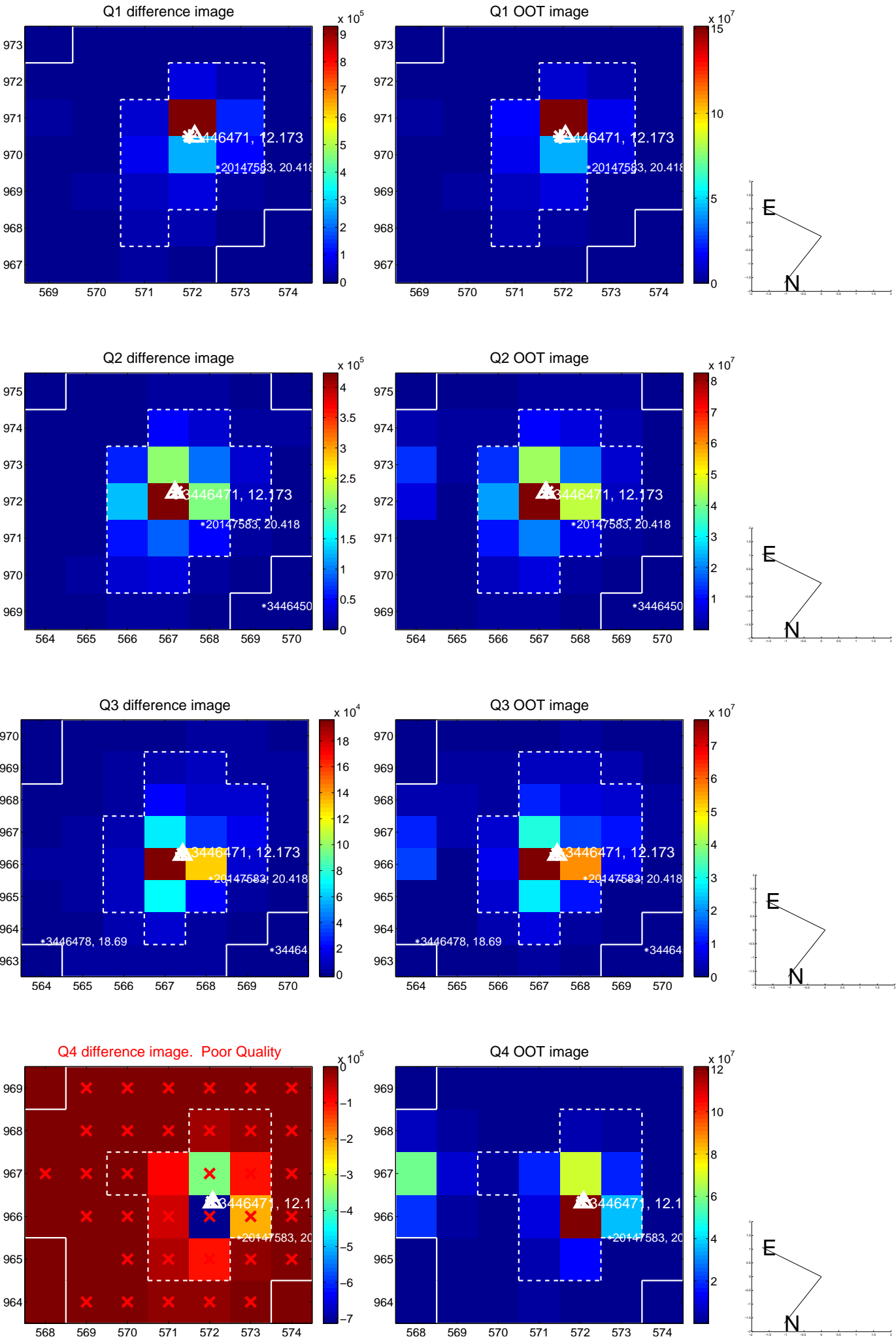
The direct PRF centroid is offset from the target star catalog position by about 0.03 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.071 ± 0.084	0.84	-0.070 ± 0.090	0.009 ± 0.116
PRF-fit source offset from KIC position	0.074 ± 0.111	0.66	-0.068 ± 0.093	-0.030 ± 0.121
photometric centroid source offset	0.20 ± 0.04	5.46	0.16 ± 0.04	0.12 ± 0.04

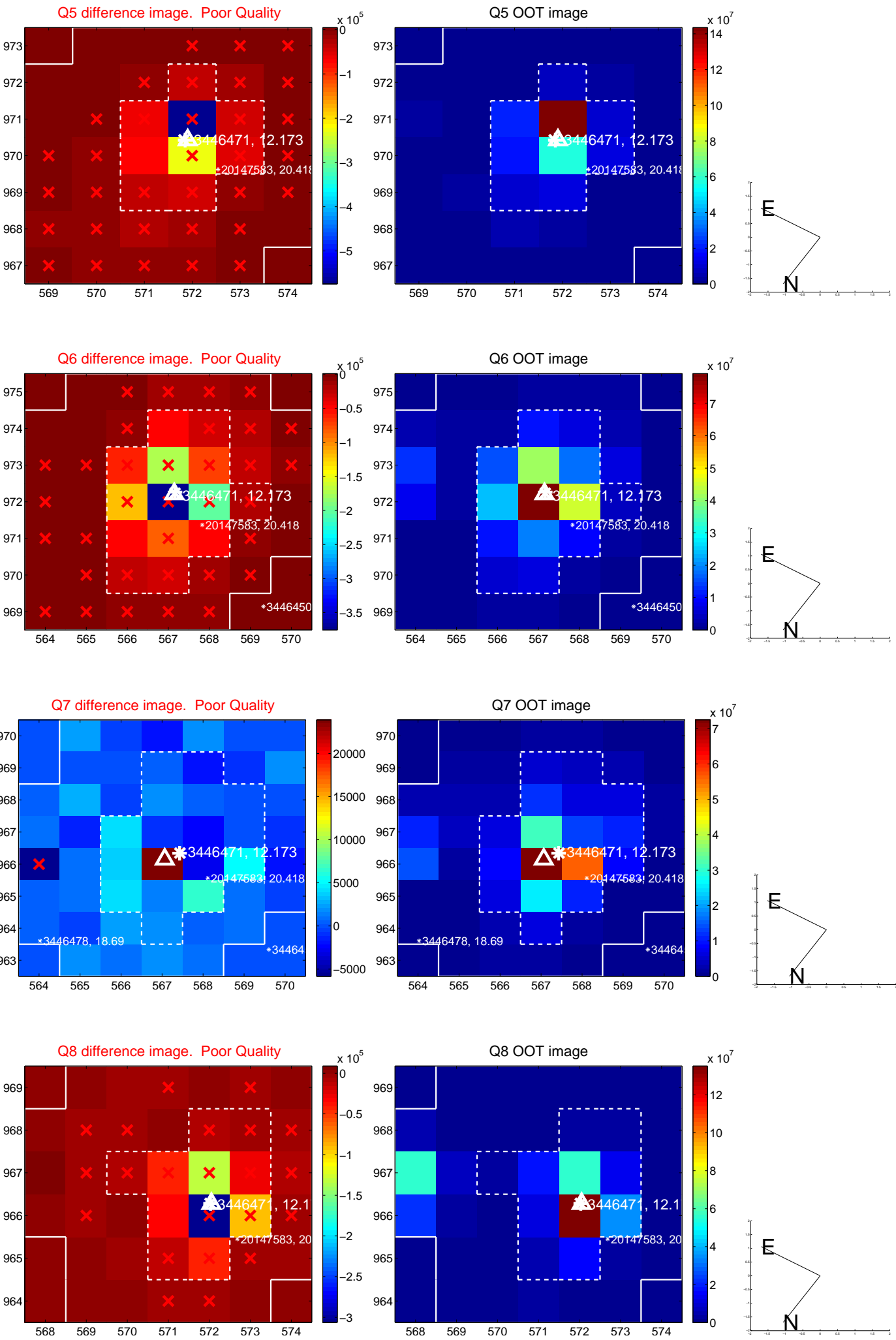


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

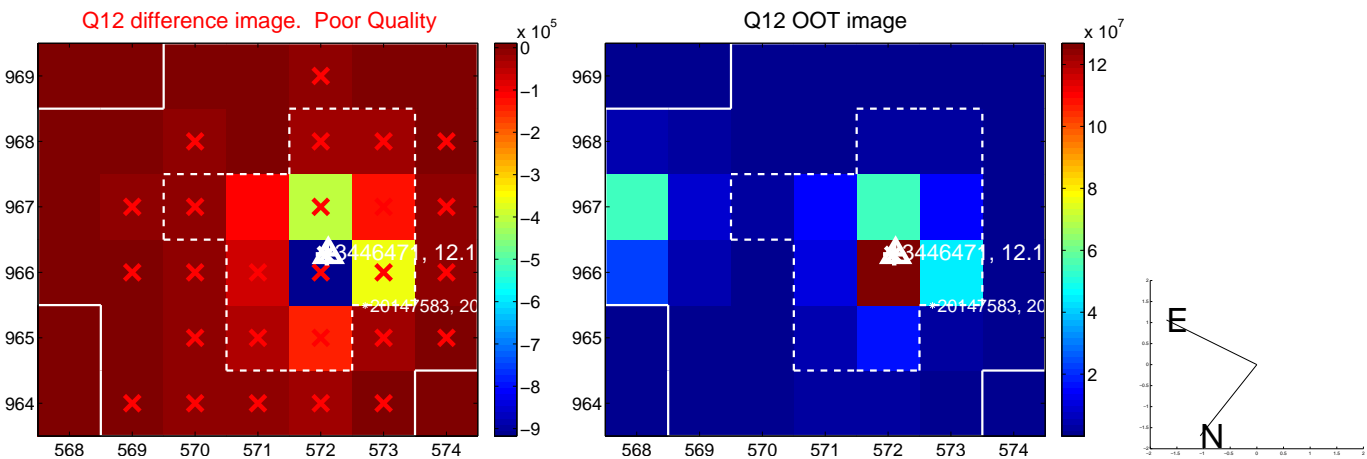
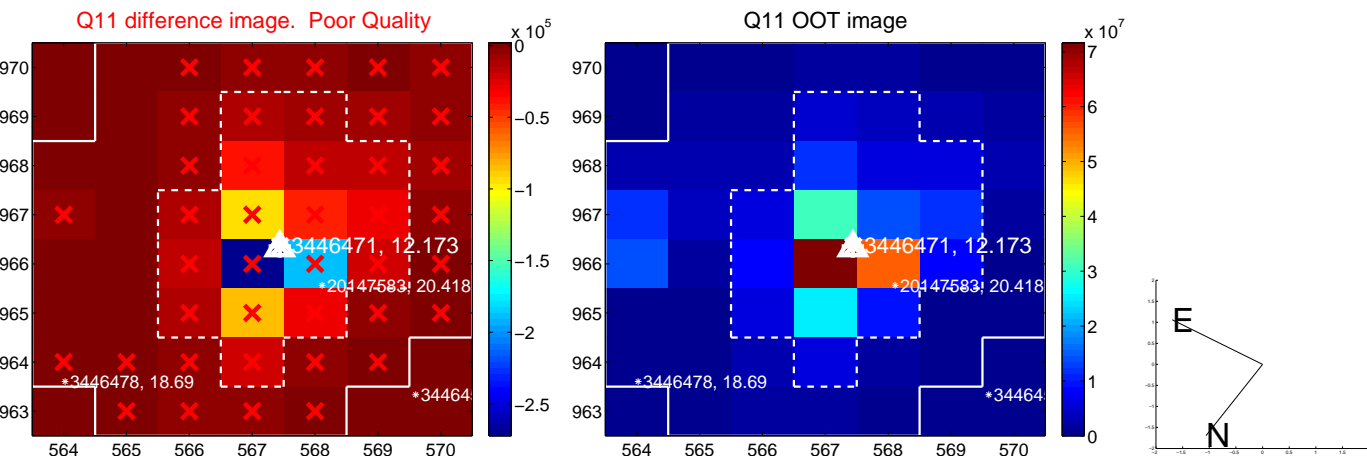
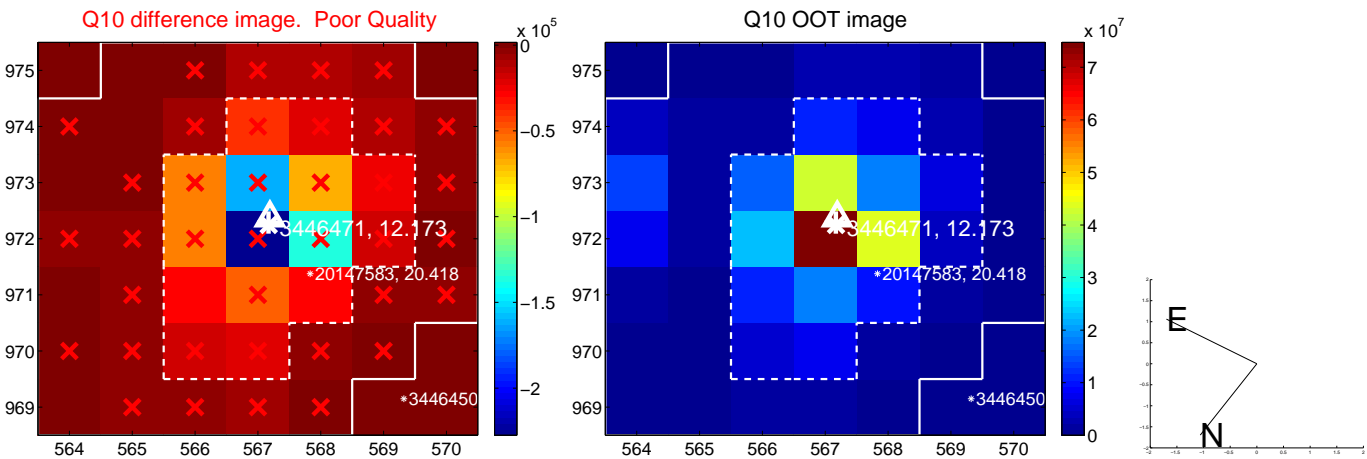
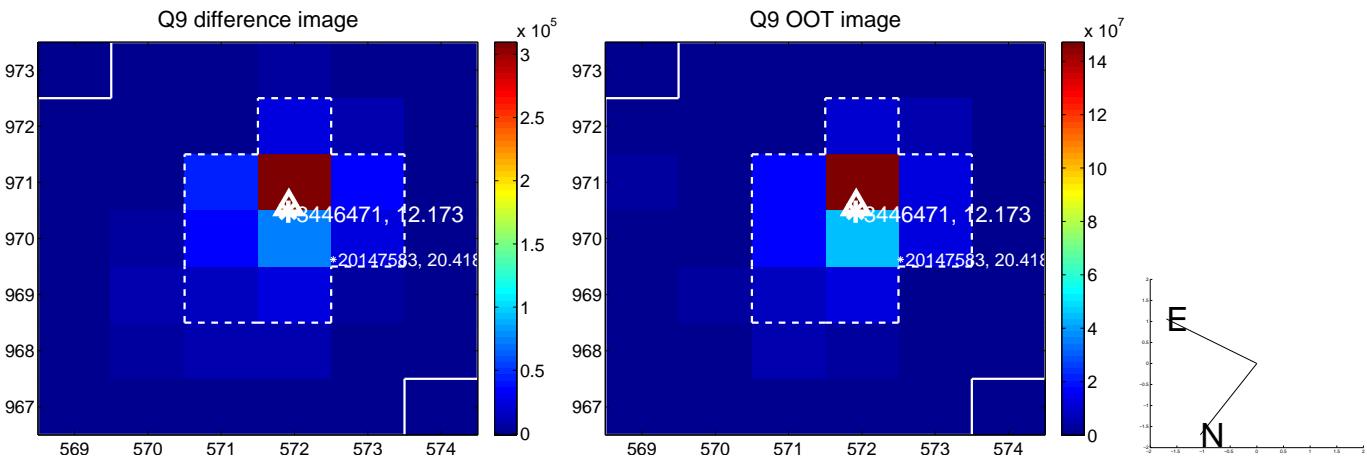
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



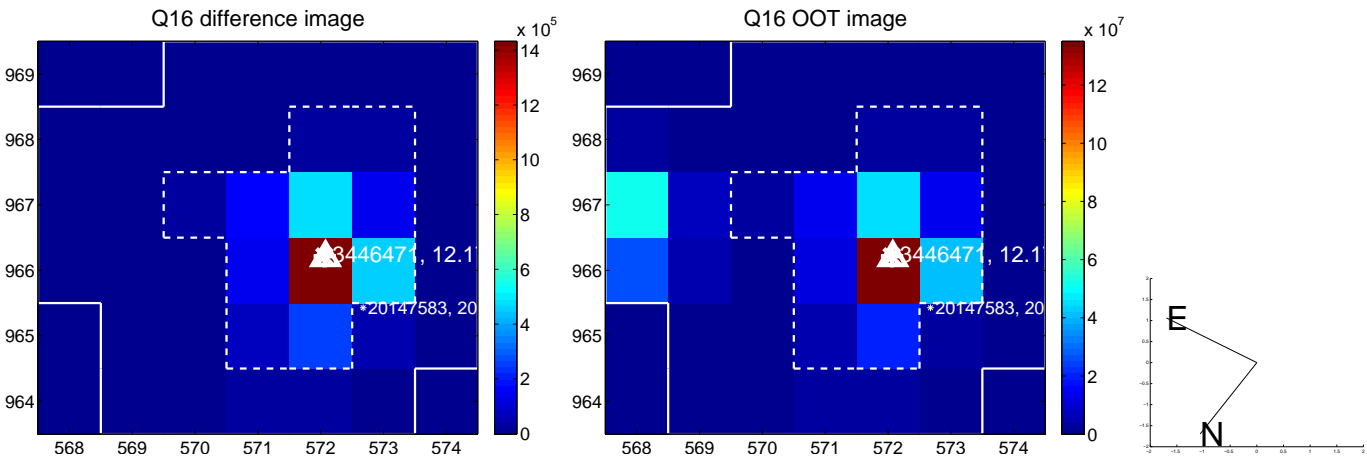
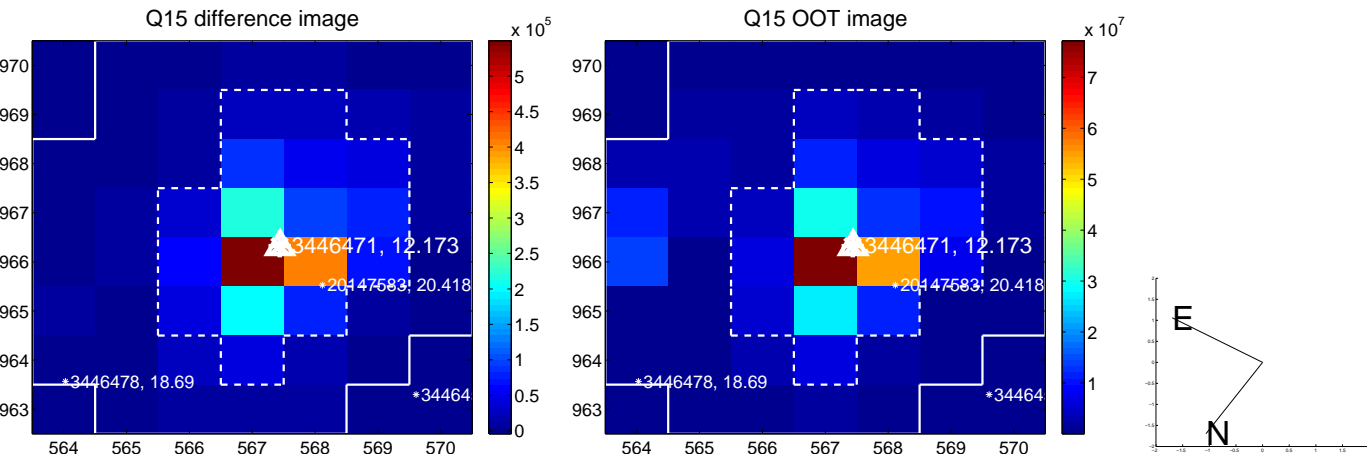
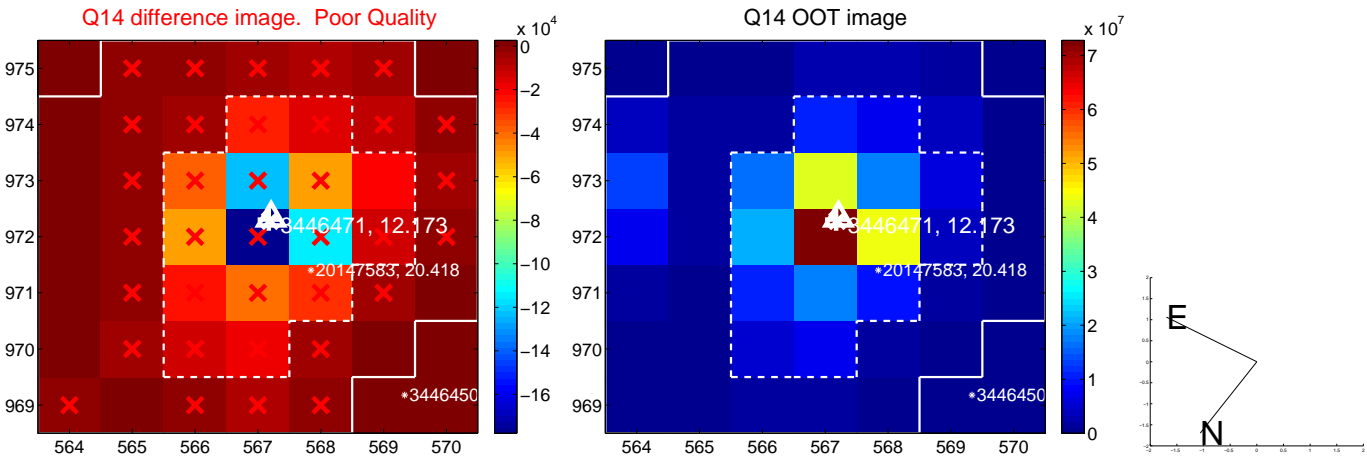
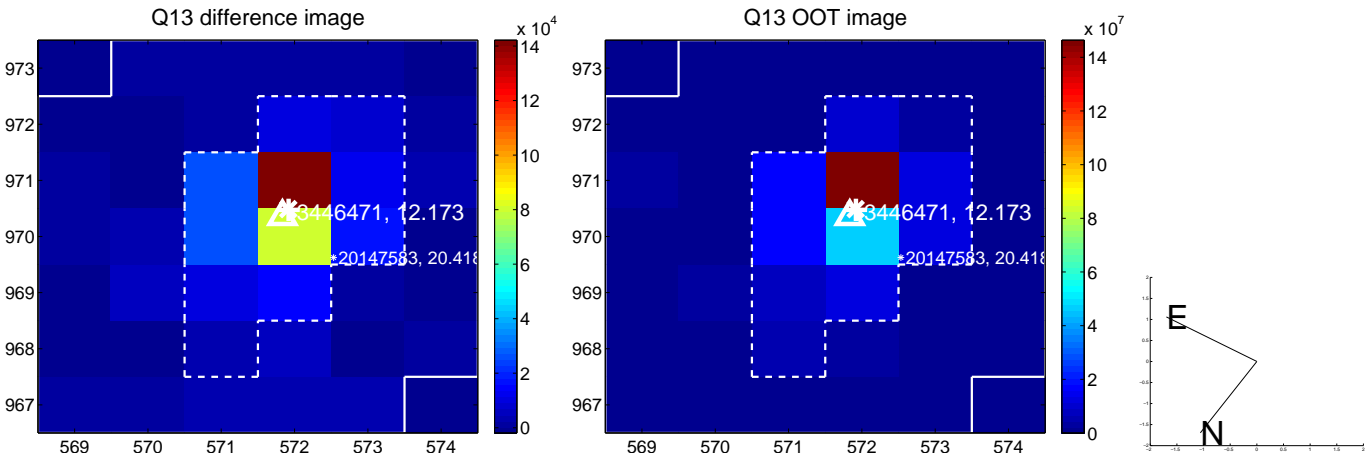
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



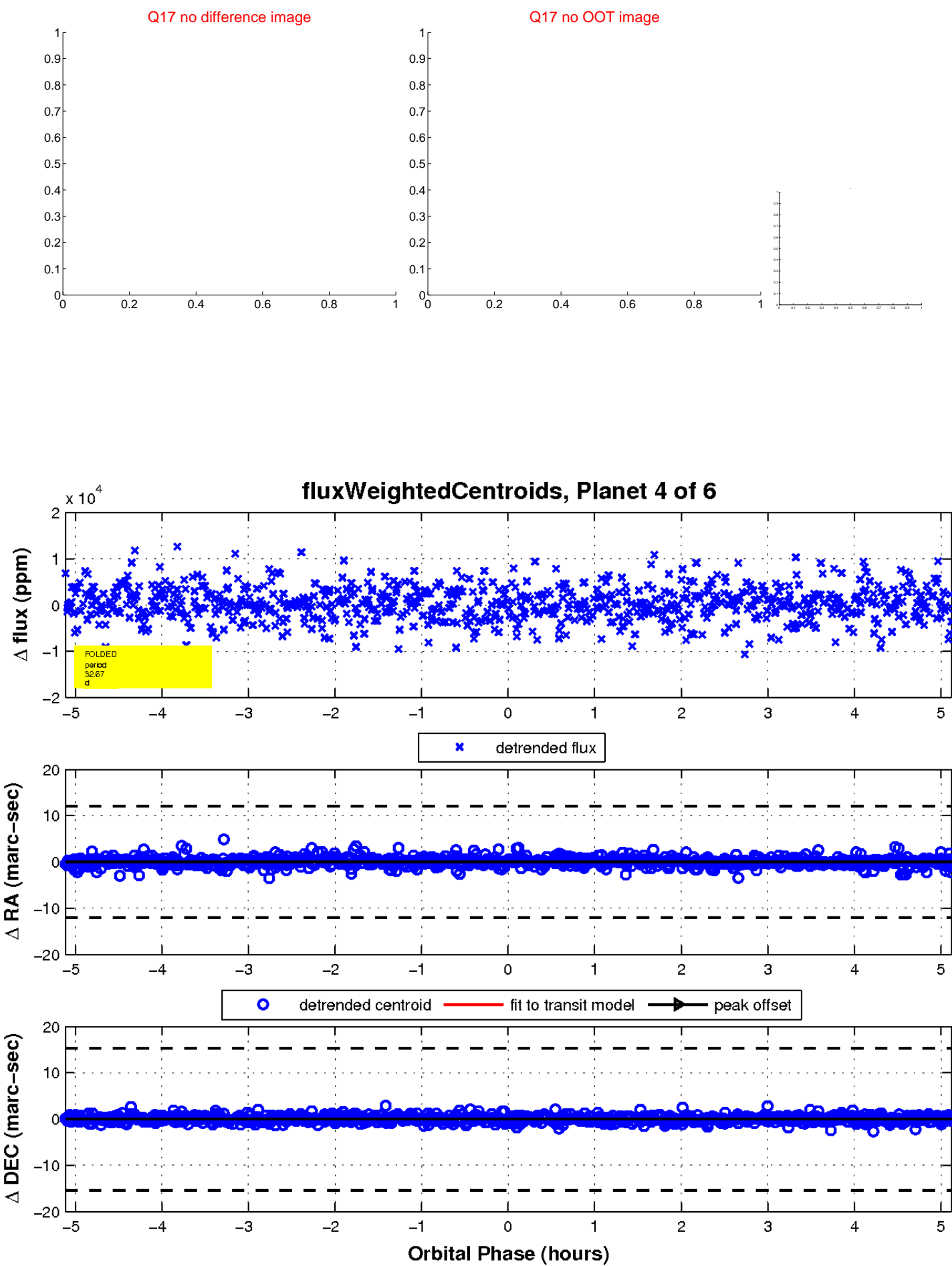
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

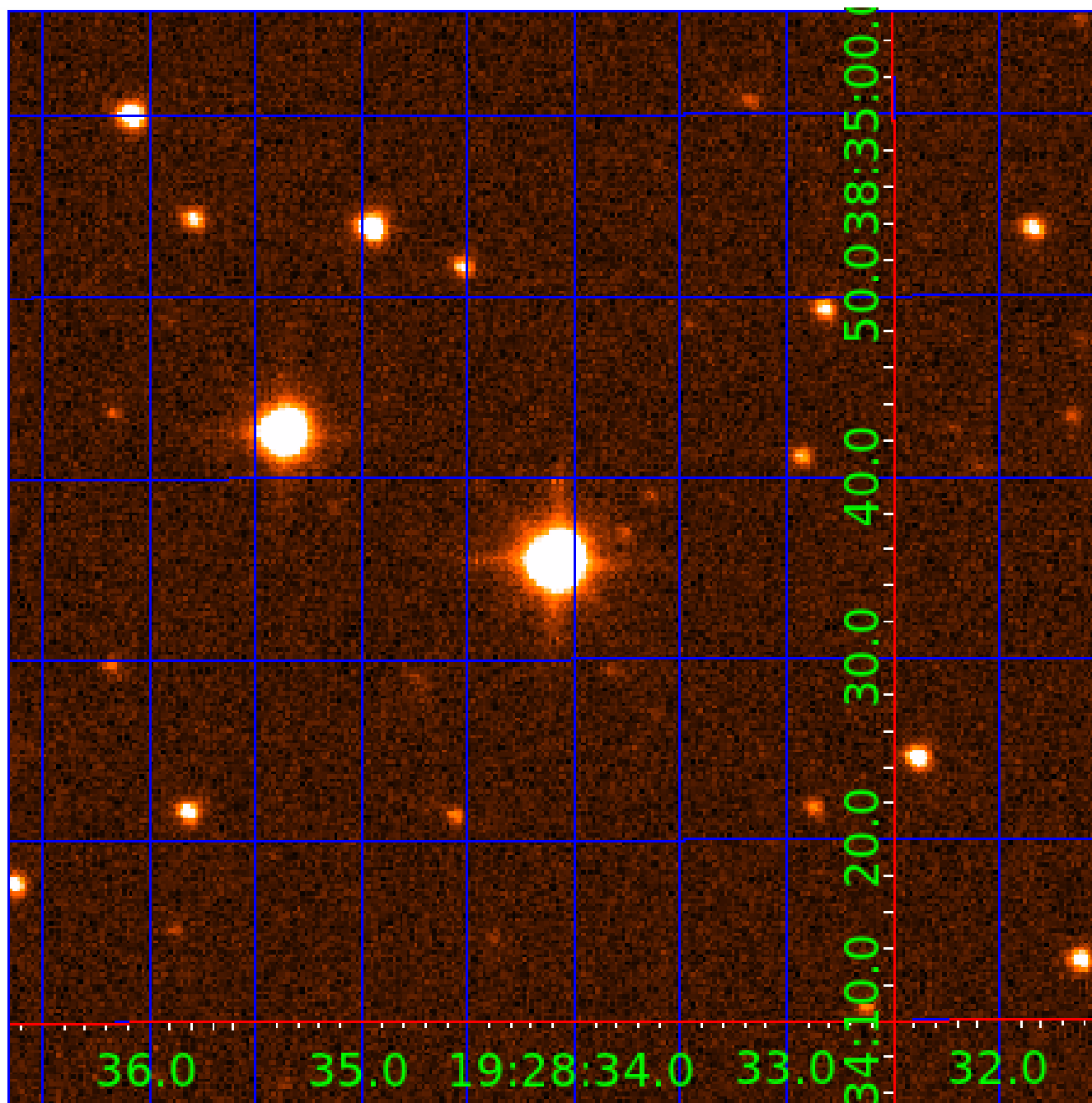


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 003446471

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})
003446471-01	OBS	No	1.032043	132.335455	442.4	6.943	10.2	13.6	3.52	7340	9.09	48896.10
003446471-02	OBS	No	0.746716	131.695923	1881.9	1.178	12.5	18.9	3.52	7340	15.69	75277.38
003446471-03	OBS	No	25.762100	143.172884	8121.5	1.362	8.8	9.2	3.52	7340	56.94	670.24
003446471-04	OBS	No	32.665761	146.287867	4836.2	1.711	8.2	8.8	3.52	7340	26.33	488.37
003446471-05	OBS	No	49.048118	145.173786	5492.5	1.655	7.7	8.6	3.52	7340	28.02	284.04
003446471-06	OBS	No	31.954637	143.557285	3468.9	2.615	7.7	7.1	3.52	7340	21.27	502.91

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003446471-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT
003446471-02	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT
003446471-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
003446471-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
003446471-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
003446471-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT

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

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

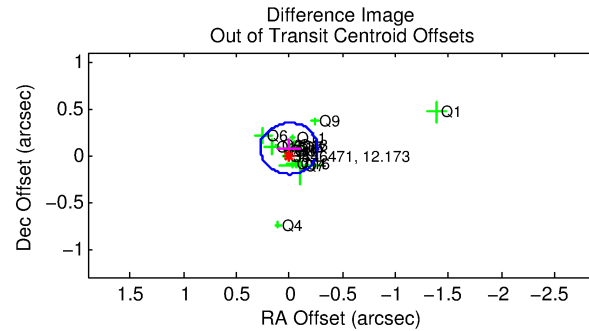
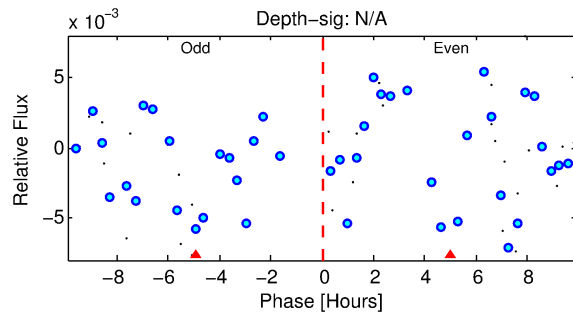
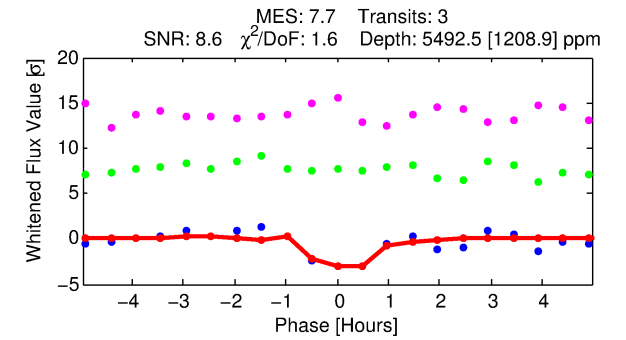
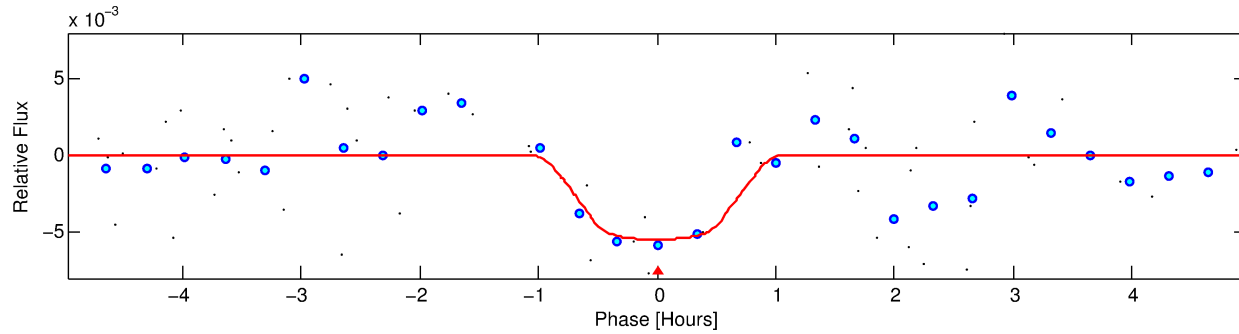
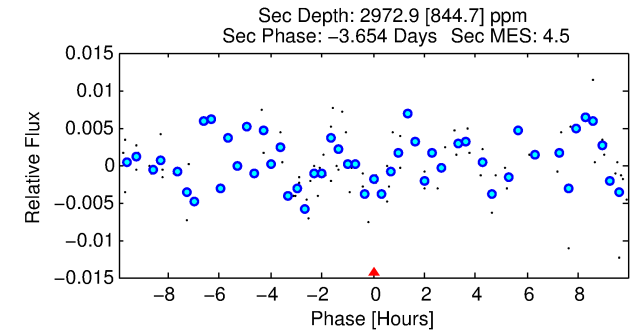
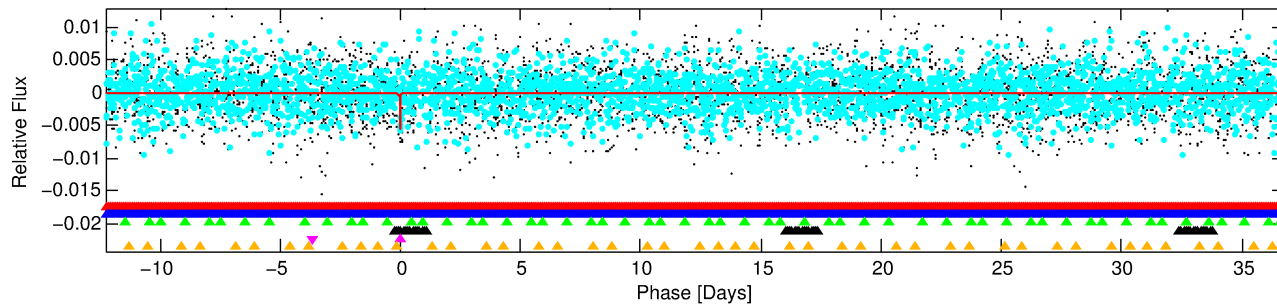
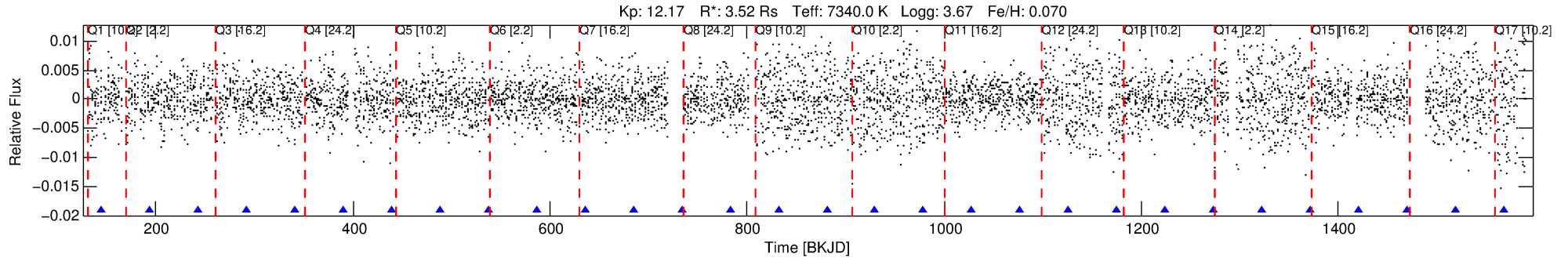
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003446471-05

No Significant Match Found

DV One-Page Summary

KIC: 3446471 Candidate: 5 of 6 Period: 49.048 d



DV Fit Results:

Period = 49.04812 [0.00059] d
Epoch = 145.1738 [0.0058] BKJD
Rp/R* = 0.0729 [0.1320]
a/R* = 185.80 [1896.37]
b = 0.69 [7.79]
Seff = 284.04 [223.72]
Teq = 1047 [206] K
Rp = 28.02 [52.60] Re
a = 0.3370 [0.1614] AU
Ag = 236.61 [878.23] [0.27σ]
Teffp = 6348 [5771] K [0.92σ]

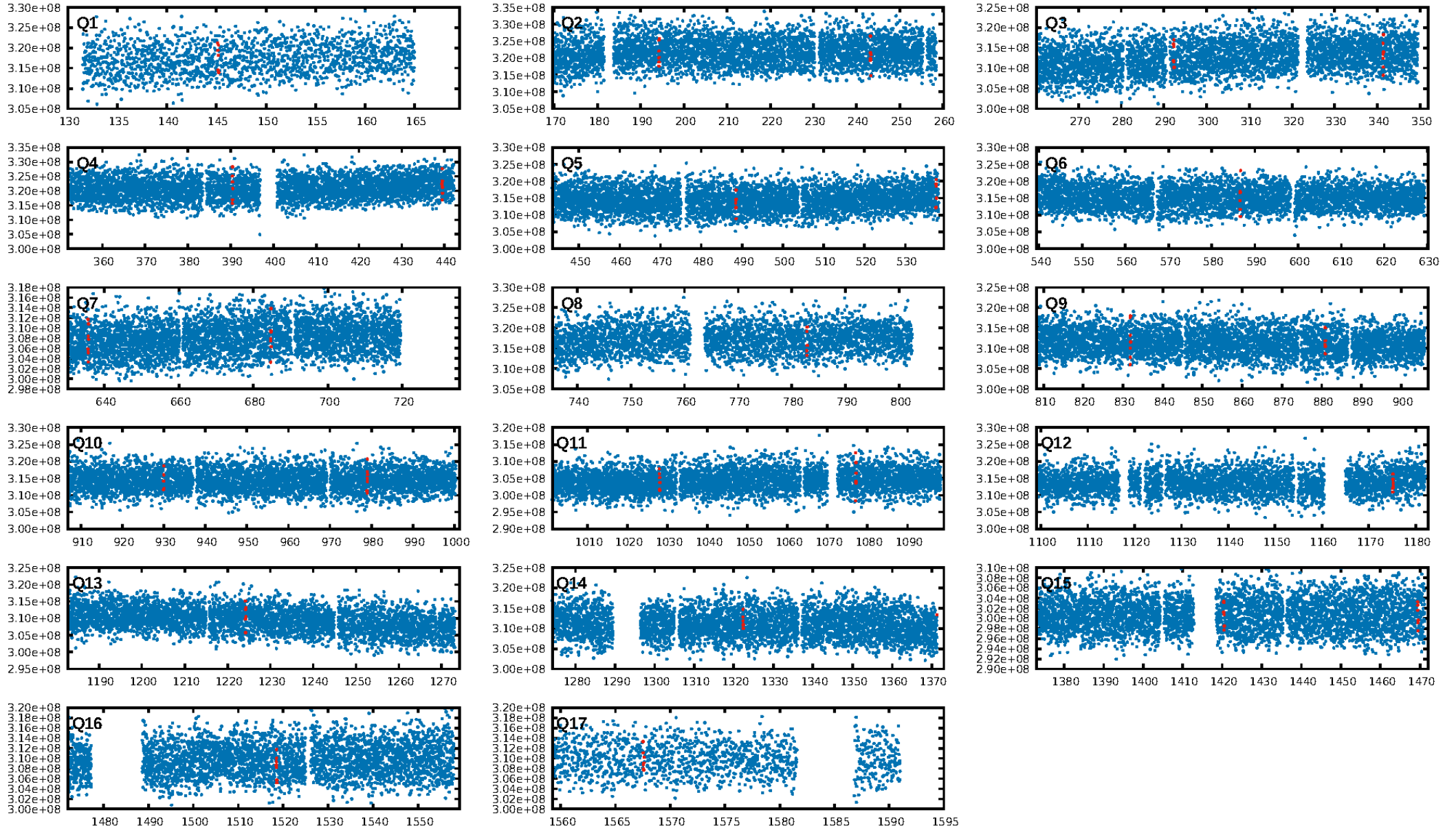
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [165.19σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 34.7%
ModelChiSquareGof-sig: 95.3%
Bootstrap-pfa: 1.05e-08
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 0.4415
Centroid-sig: 87.0%
Centroid-so: 0.200 arcsec [5.12σ]
OotOffset-rm: 0.072 arcsec [0.79σ]
KicOffset-rm: 0.066 arcsec [0.62σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.47 [8/17]
DiffImageOverlap-fno: 0.18 [3/17]

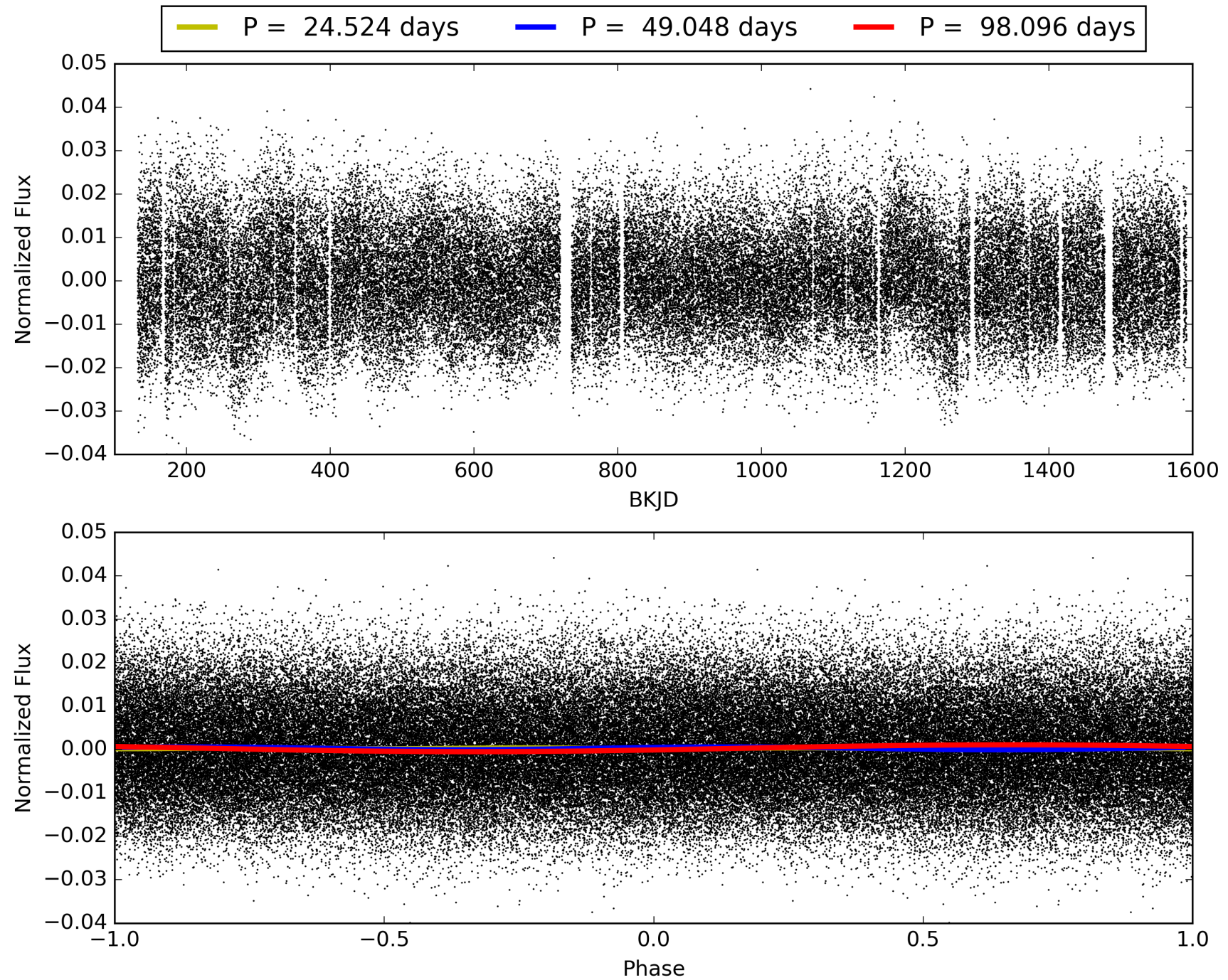
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 06:34:36 Z

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

TCE 003446471-05, PDC Light Curves

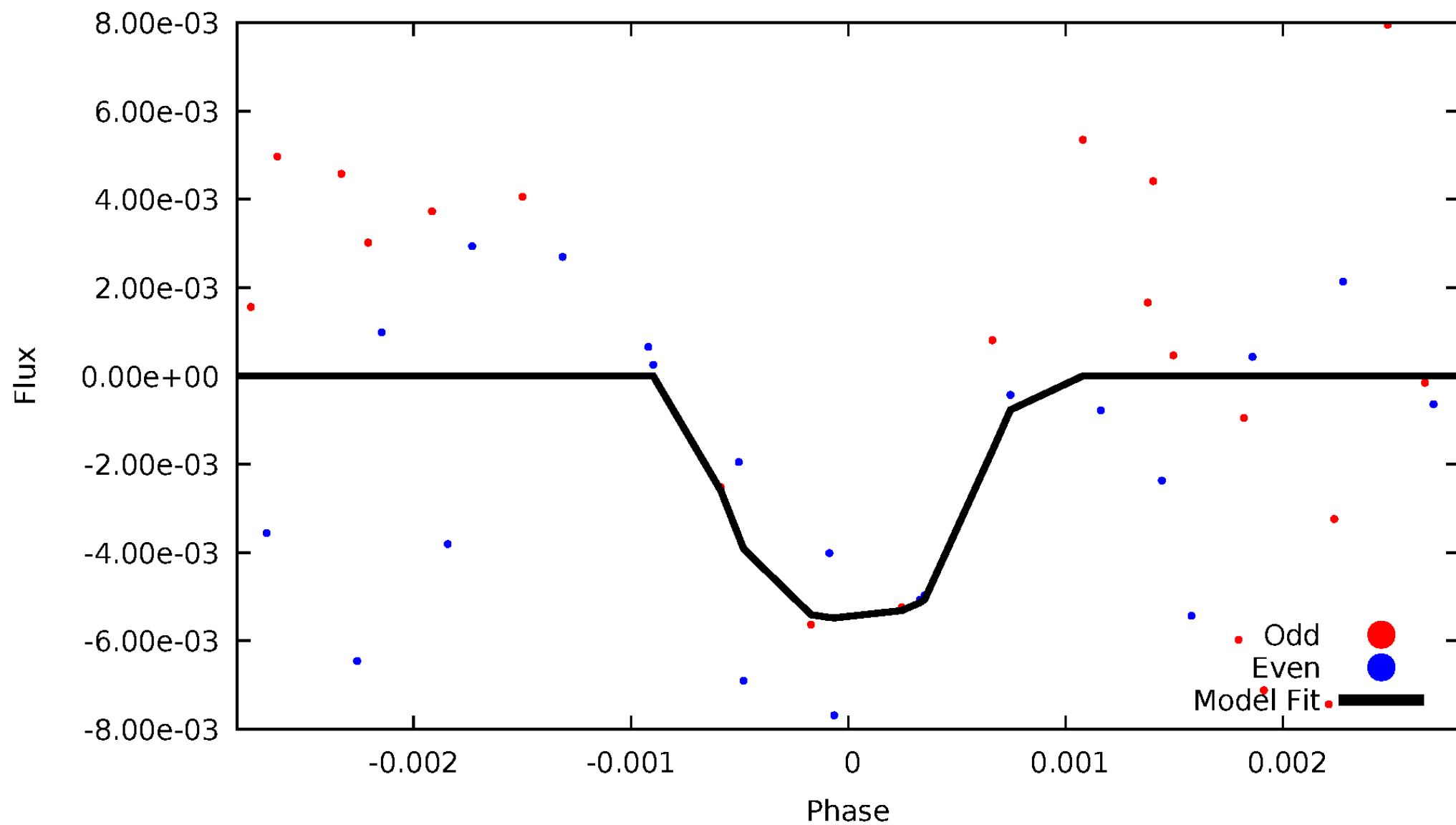


TCE 003446471-05



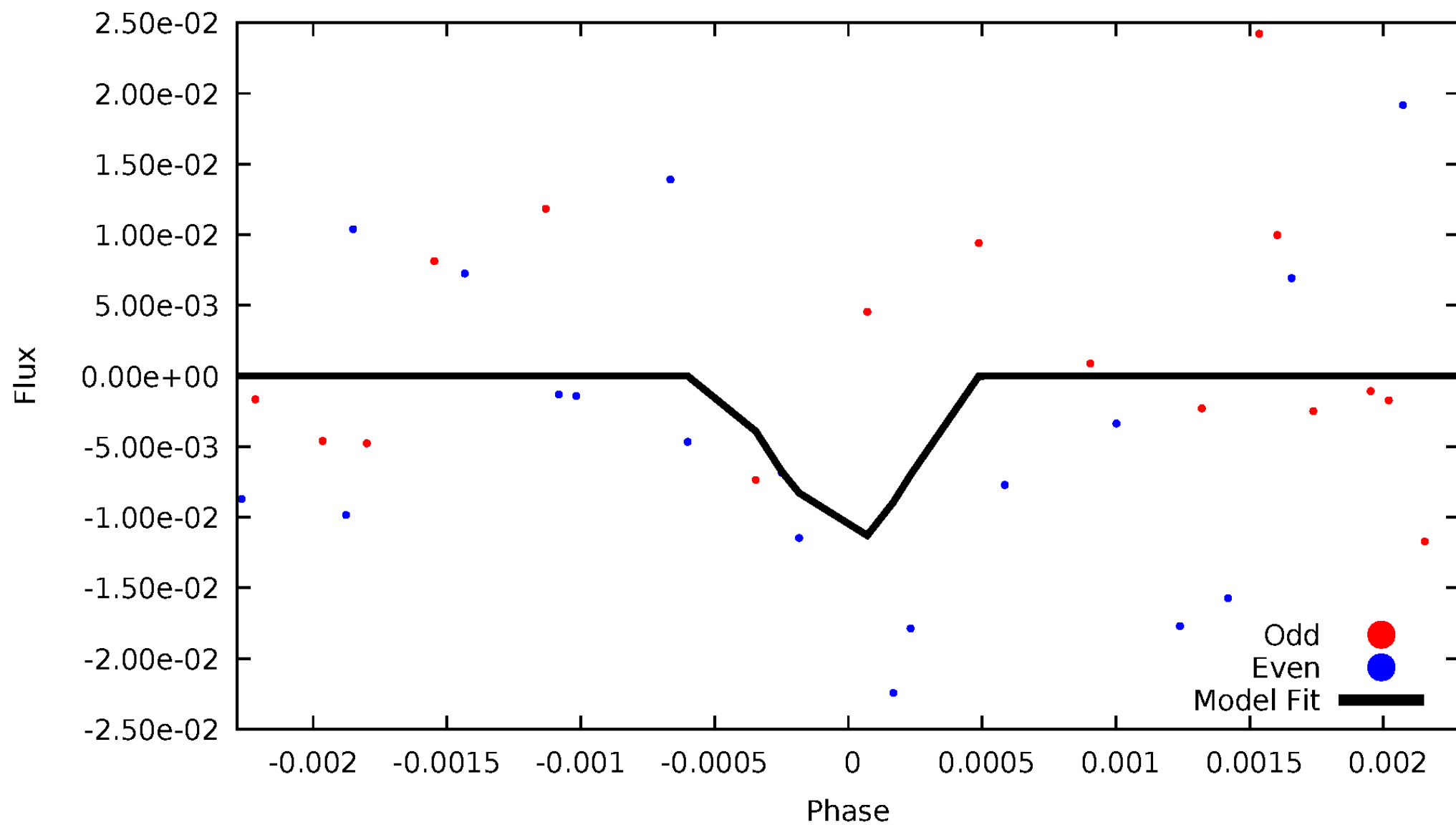
DV Odd/Even

TCE 003446471-05



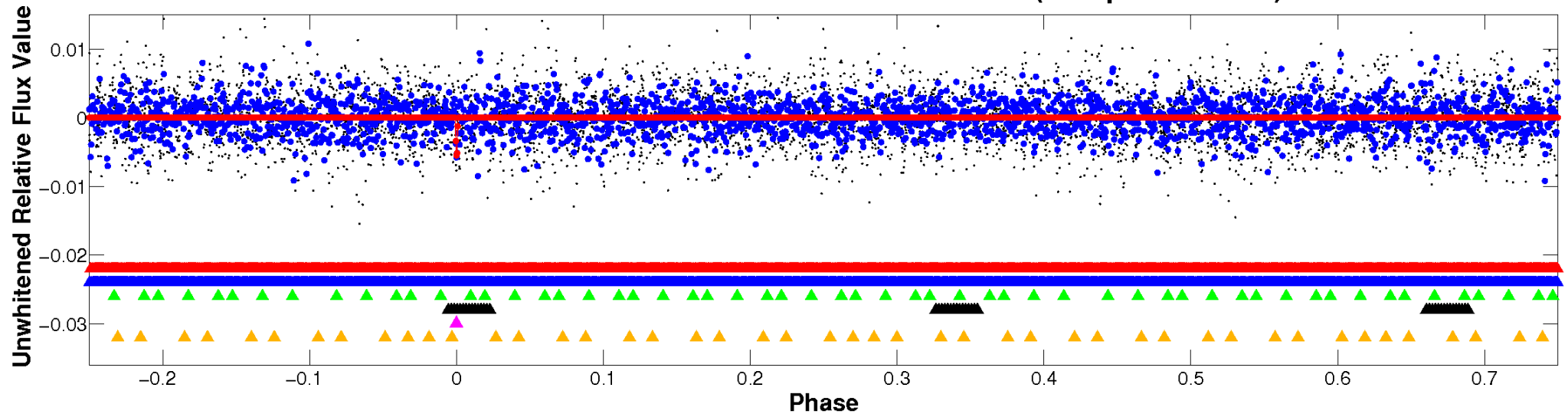
ALT Odd/Even

TCE 003446471-05

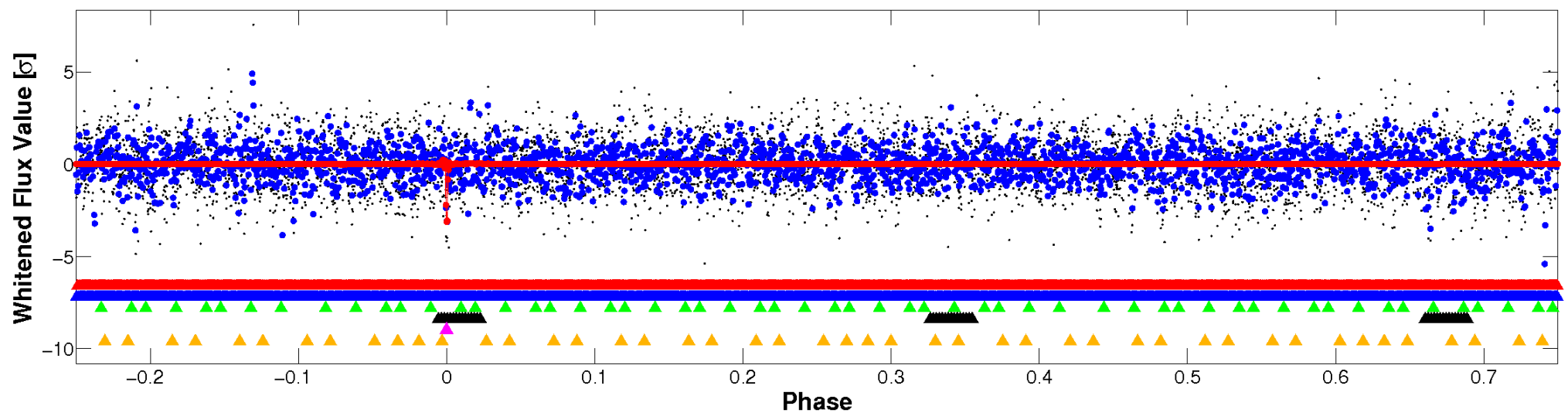


Non-Whitened Vs. Whitened Light Curve

Planet 5 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

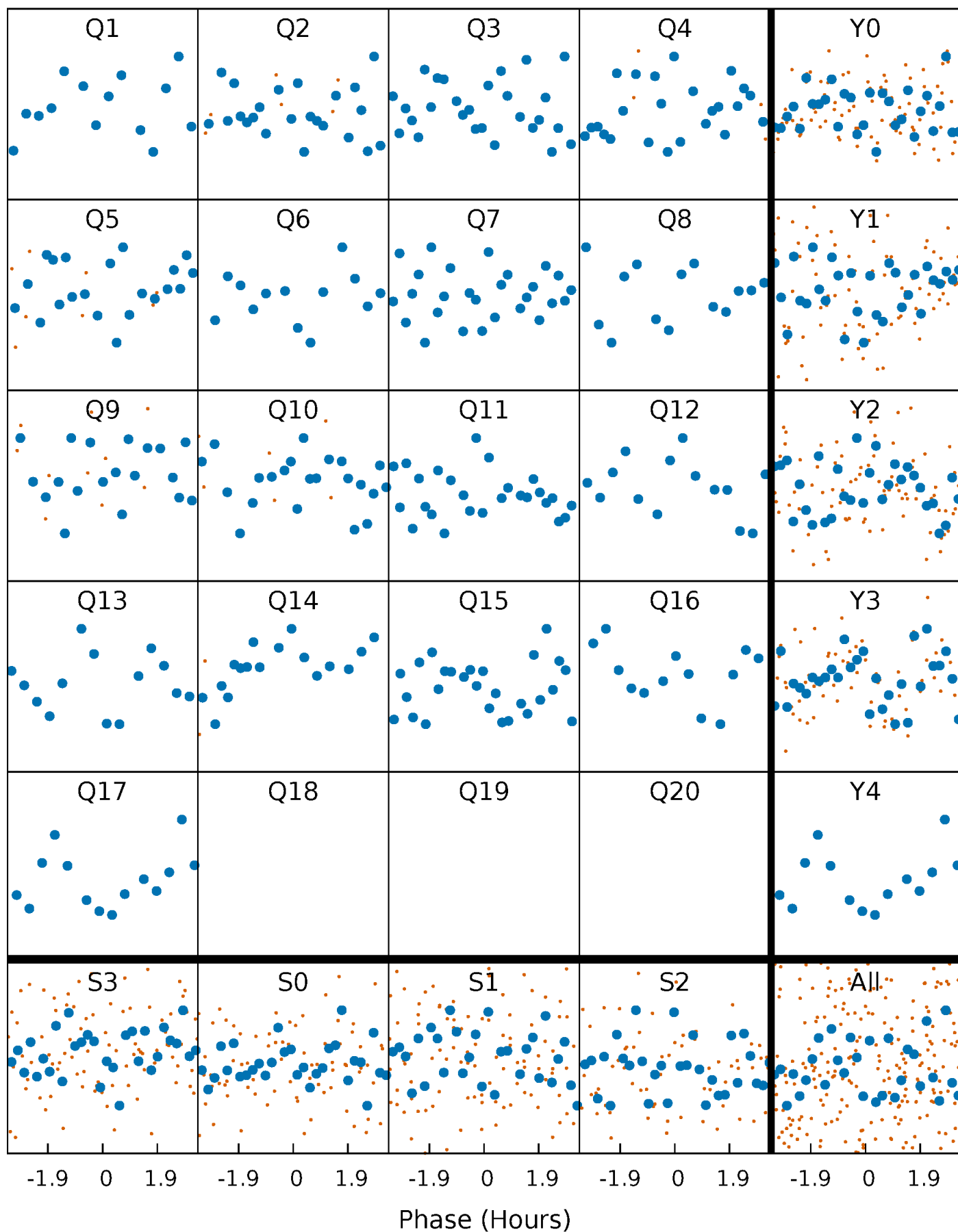


Planet 5 : Phased Whitened Flux Time Series (Fit Epoch/Period)



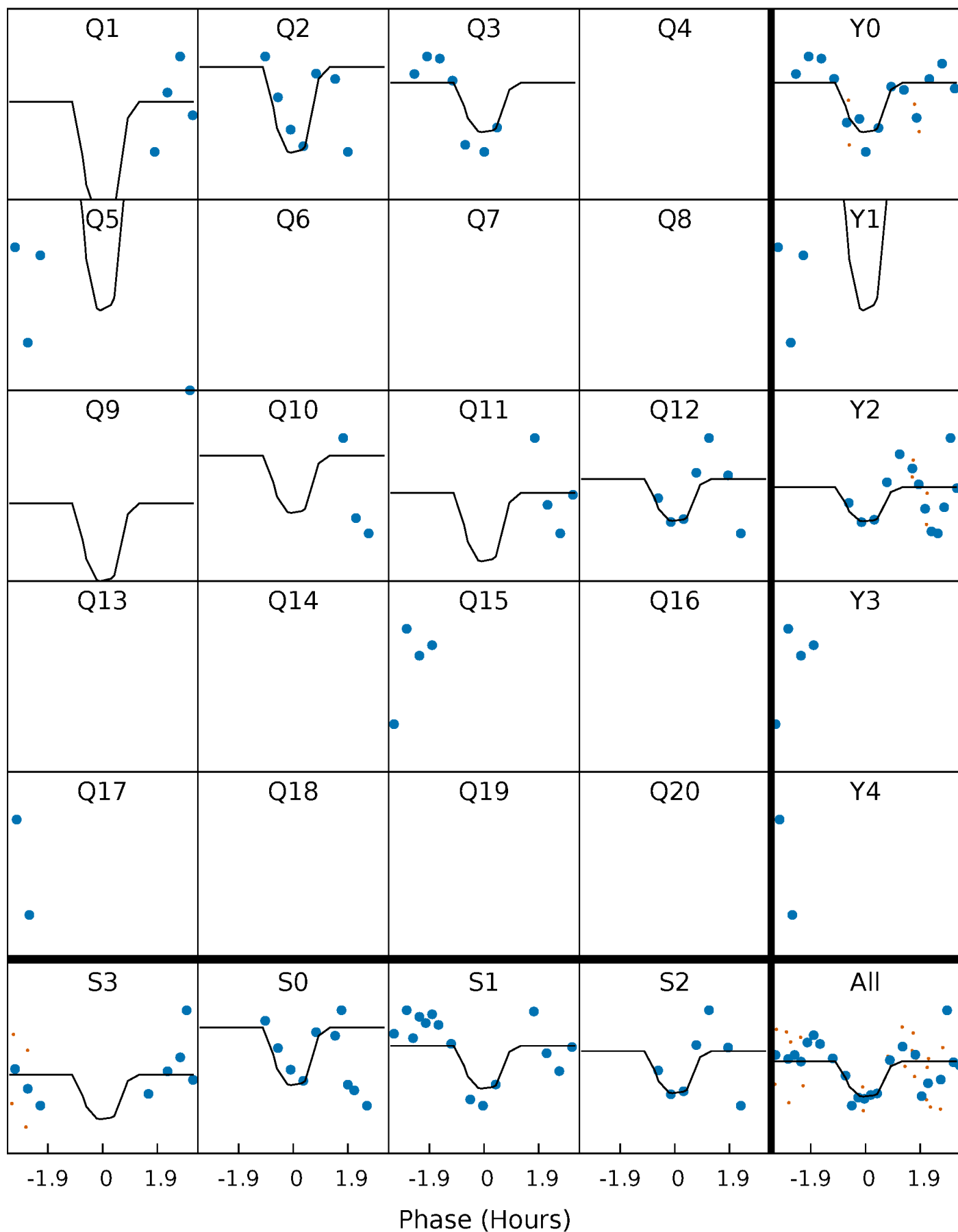
PDC Quarter-Phased Transit Curves

TCE 003446471-05 $P = 49.048118$ Days $T_0 = 145.173786$ (BKJD)



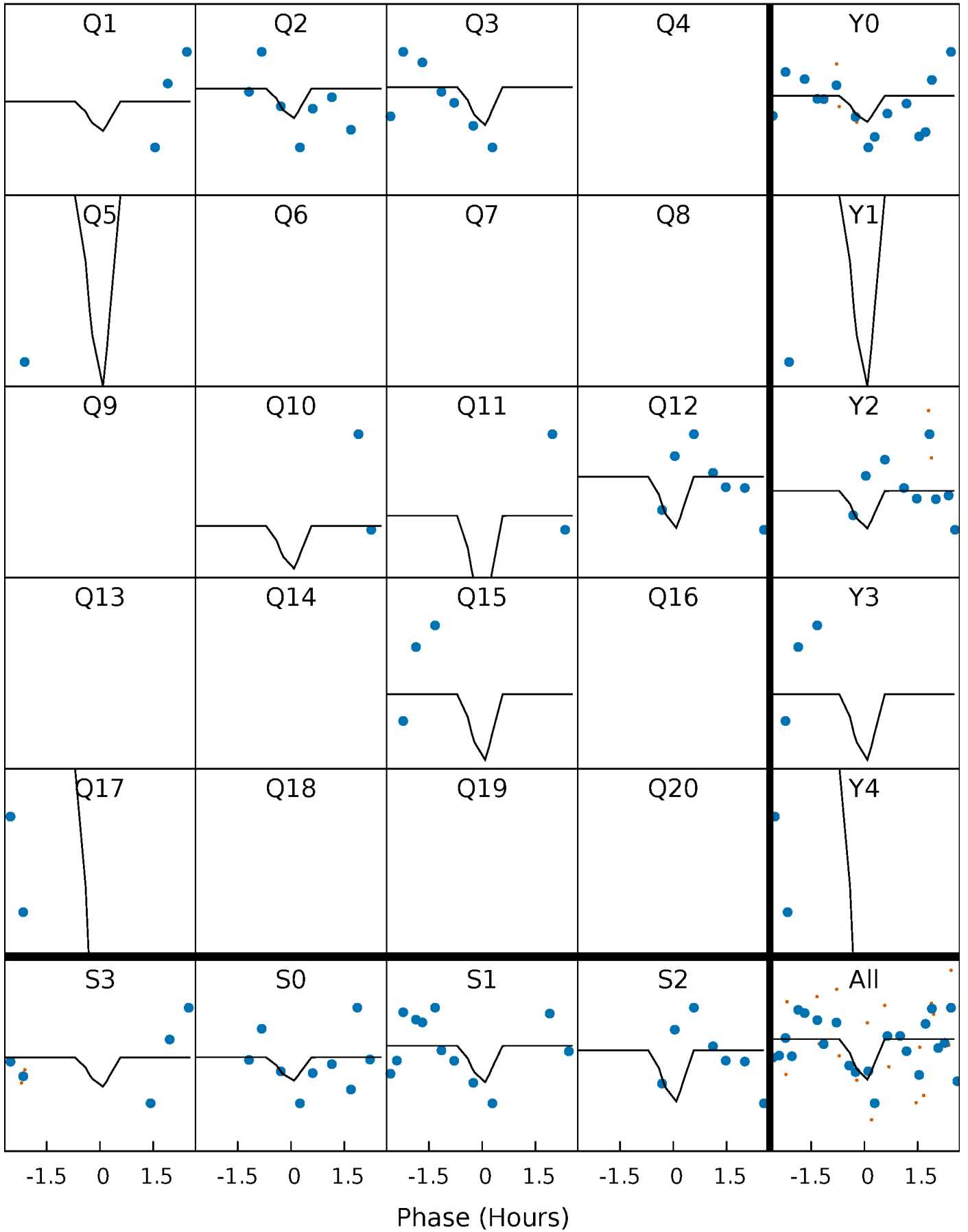
DV Quarter-Phased Transit Curves

TCE 003446471-05 $P = 49.048118$ Days $T_0 = 145.173786$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

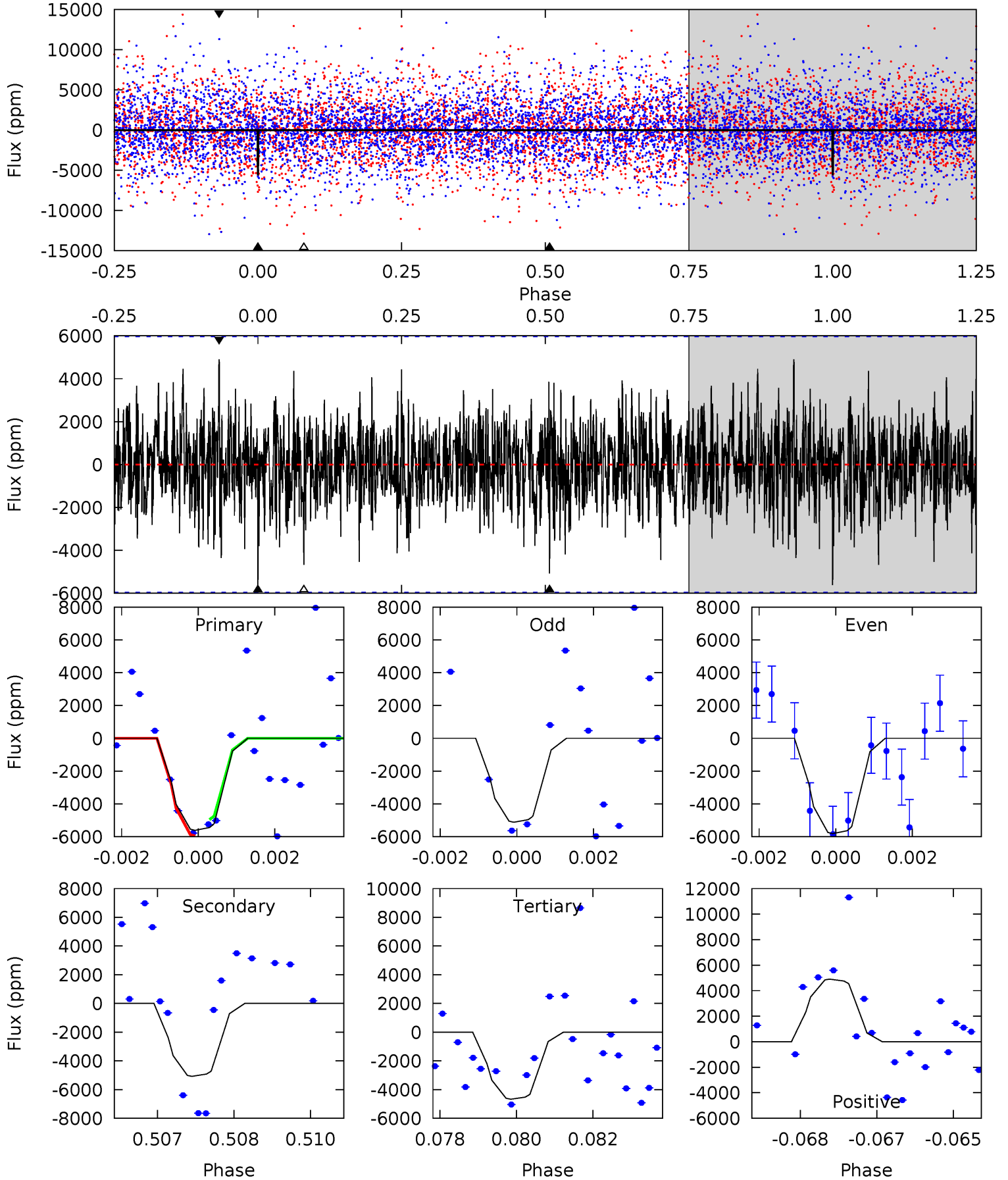
TCE 003446471-05 P= 49.047079 Days $T_0=145.183760$ (BKJD)



DV Model-Shift Uniqueness Test

003446471-05, P = 49.048118 Days, E = 96.125668 Days

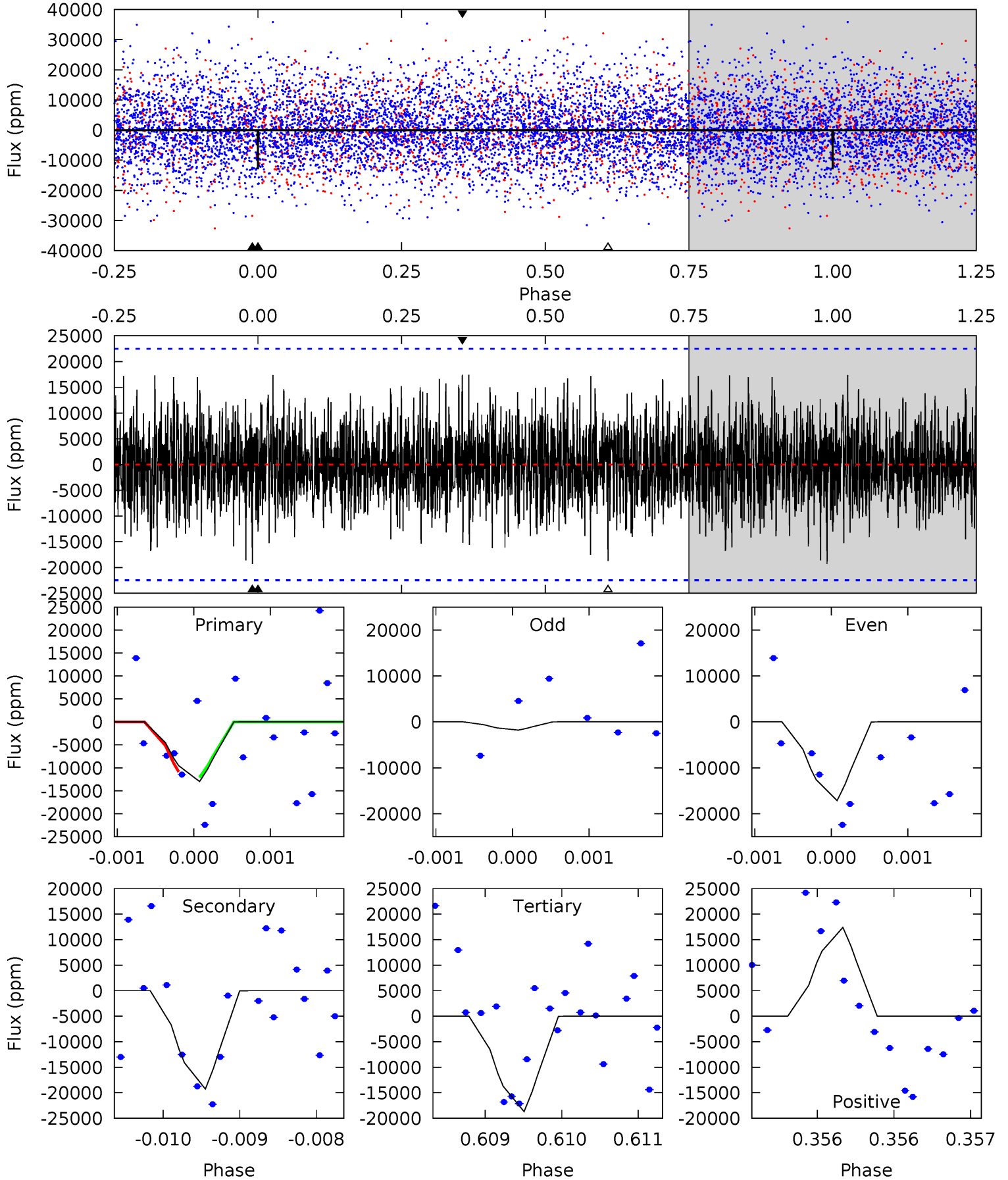
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.03	4.55	4.19	4.40	5.36	3.14	1.29	0.85	0.63	0.37	0.15	0.29	1.08	0.47	0.45



Alt Model-Shift Uniqueness Test

003446471-05, P = 49.047079 Days, E = 96.136681 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.16	4.68	4.55	4.23	5.46	3.31	1.34	-1.39	-1.07	0.14	0.45	1.76	0.65	0.47	0.14



Stellar Parameters For KIC 003446471

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	7340^{+205}_{-334}	$3.671^{+0.450}_{-0.075}$	$0.070^{+0.200}_{-0.300}$	$3.522^{+0.412}_{-1.753}$	$2.123^{+0.244}_{-0.609}$	$0.068^{+0.293}_{-0.018}$
	+3%/-5%	+12%/-2%	+286%/-429%	+12%/-50%	+11%/-29%	+429%/-26%
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 003446471-05 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-5076 ± 1115	$40.85^{+41.44}_{-28.39}$	1418^{+98}_{-176}	5525^{+5394}_{-1320}	190^{+1918}_{-145}
Alt.	-19262 ± 4113	$47.99^{+45.62}_{-31.23}$	1417^{+85}_{-178}	7159^{+8452}_{-1798}	509^{+3714}_{-366}

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 $A_{obs} \gg 1.0$

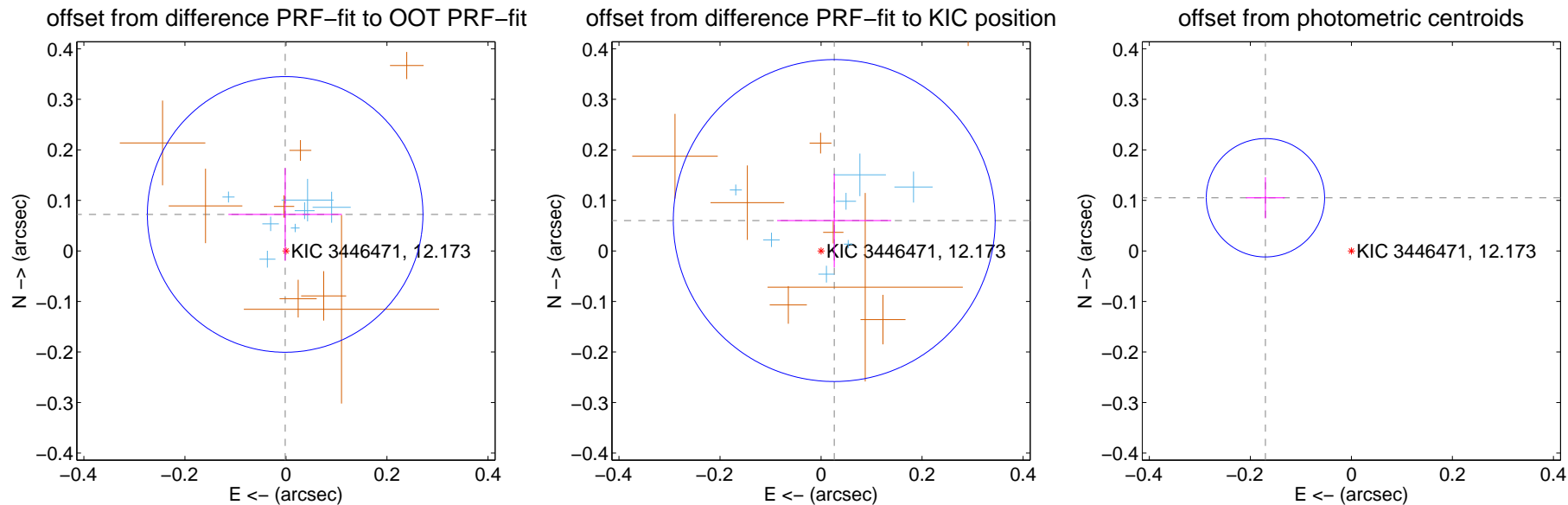
DV Centroid Data

Supplemental centroid analysis for 003446471-05. Kepler magnitude: 12.17. Transit SNR 8.57

There are 8 quarters with good PRF difference image offsets

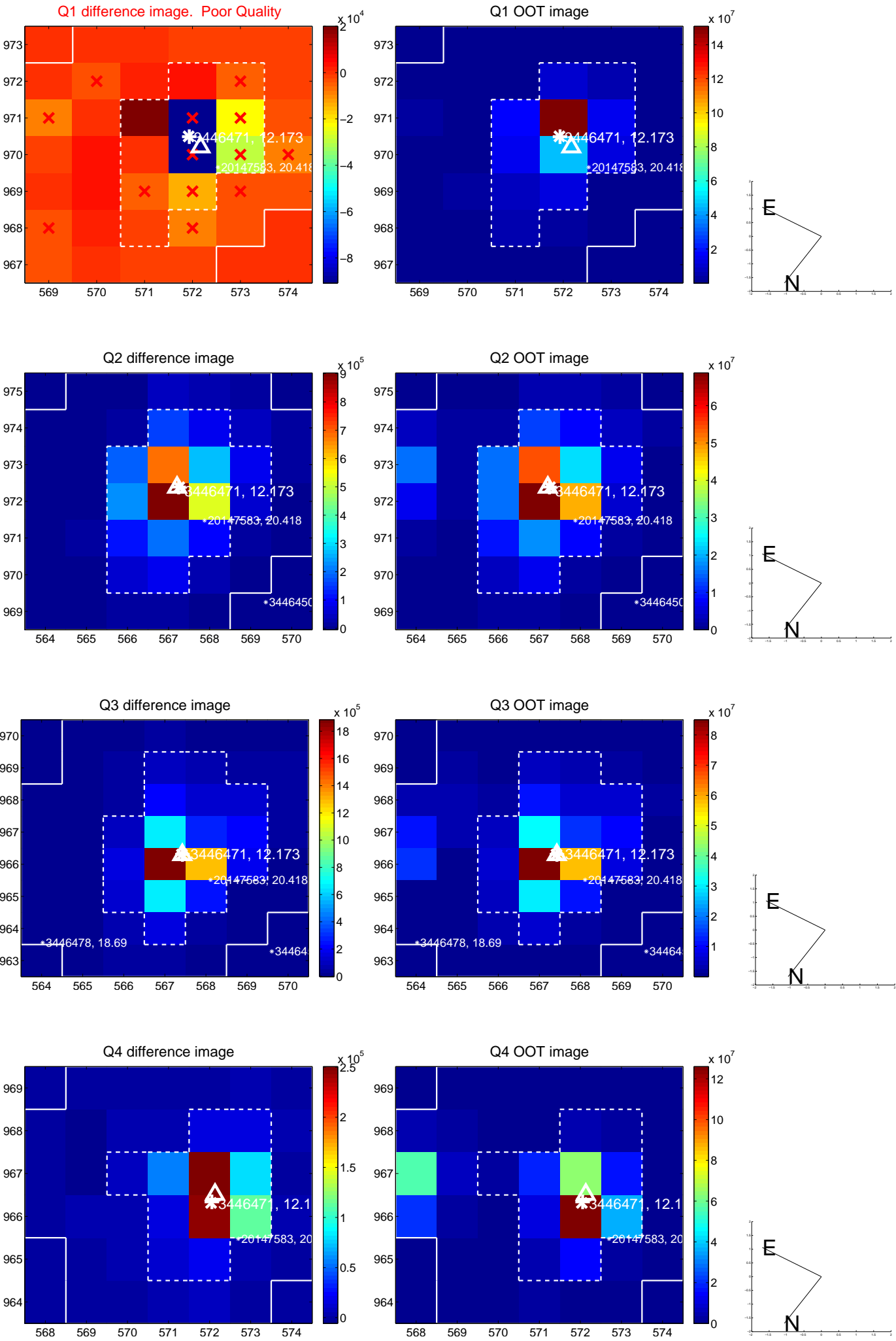
The direct PRF centroid is offset from the target star catalog position by about 0.02 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.072 ± 0.091	0.79	0.002 ± 0.112	0.072 ± 0.092
PRF-fit source offset from KIC position	0.066 ± 0.106	0.62	-0.026 ± 0.113	0.060 ± 0.093
photometric centroid source offset	0.20 ± 0.04	5.12	0.17 ± 0.04	0.11 ± 0.04

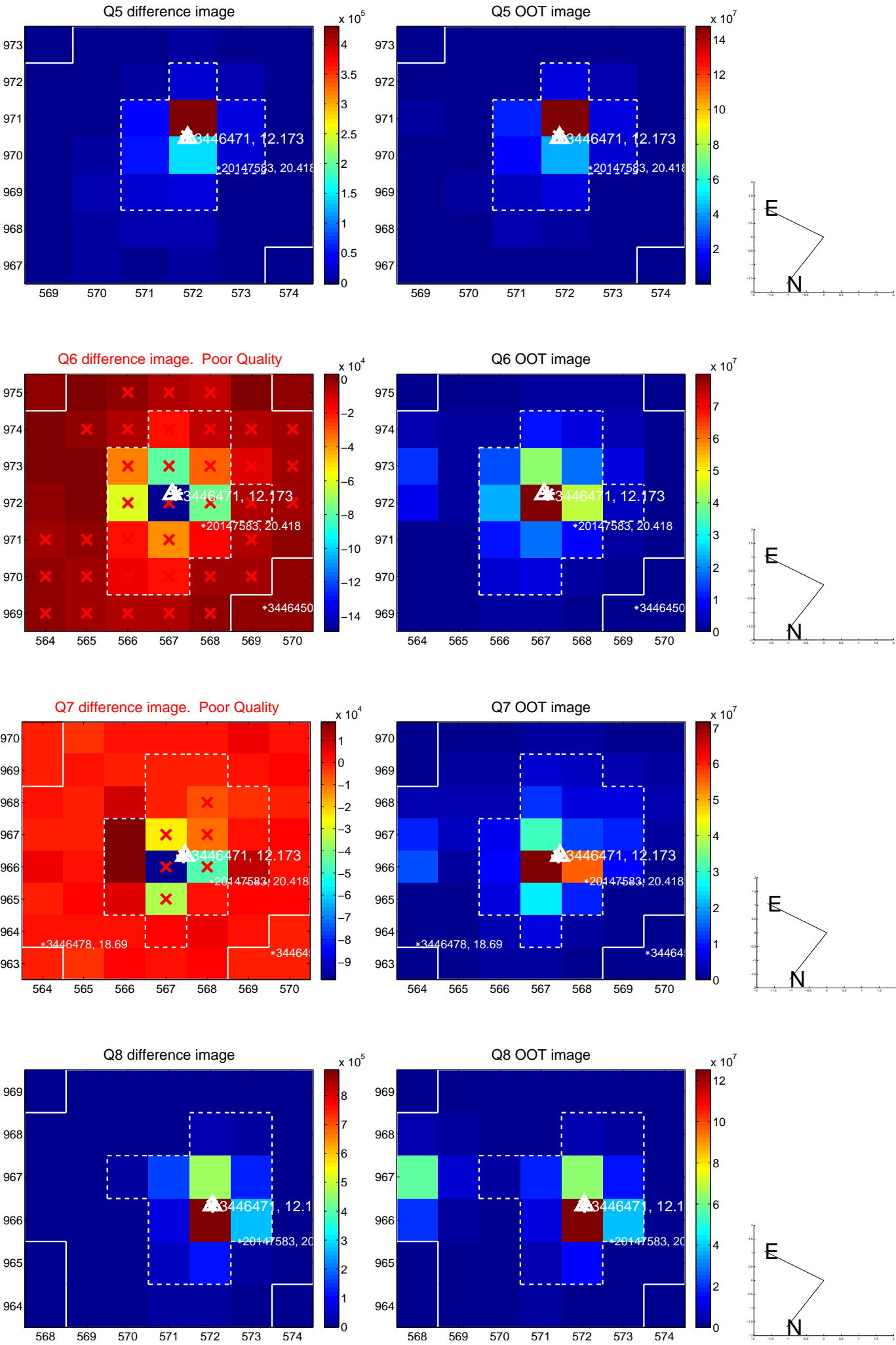


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

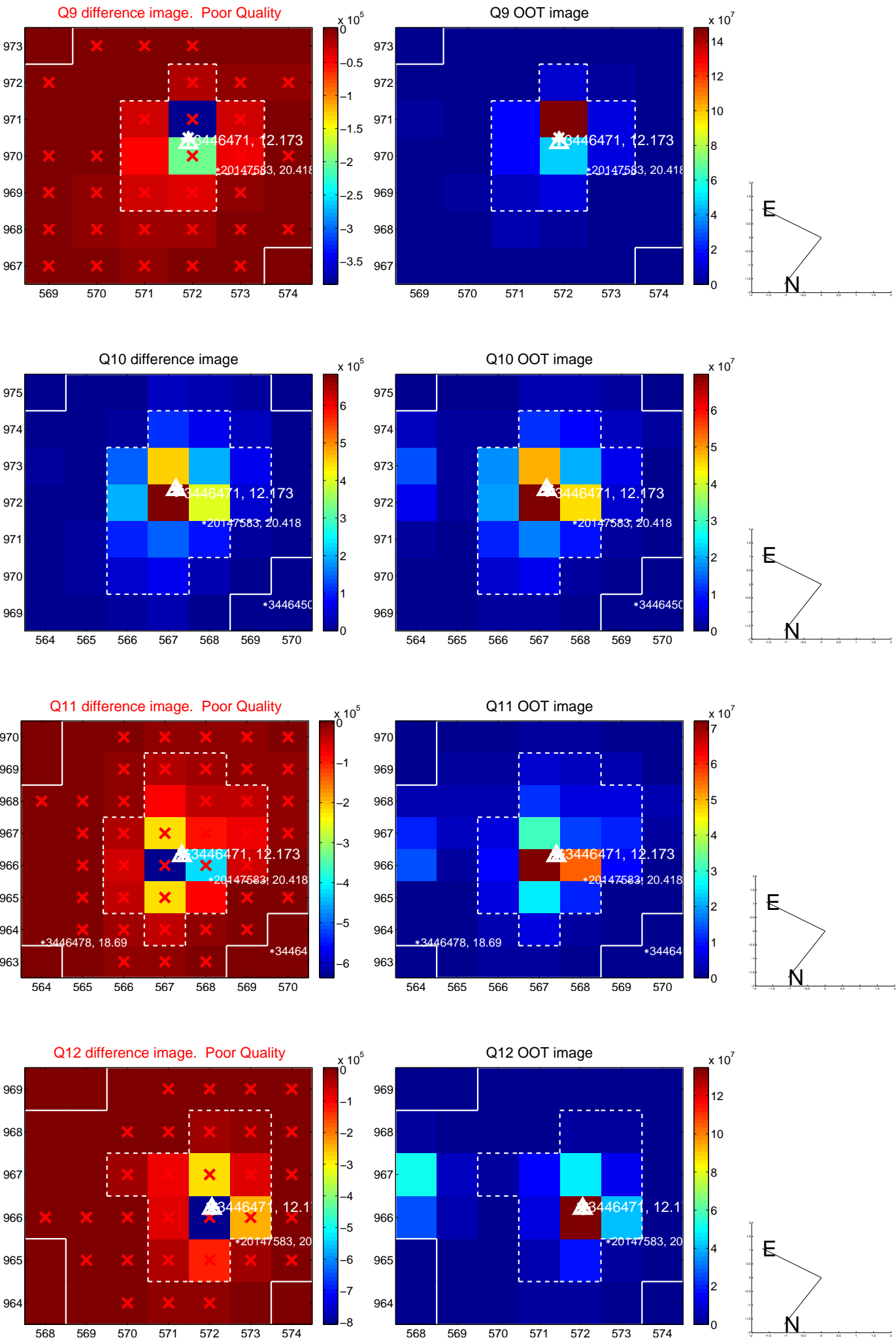
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



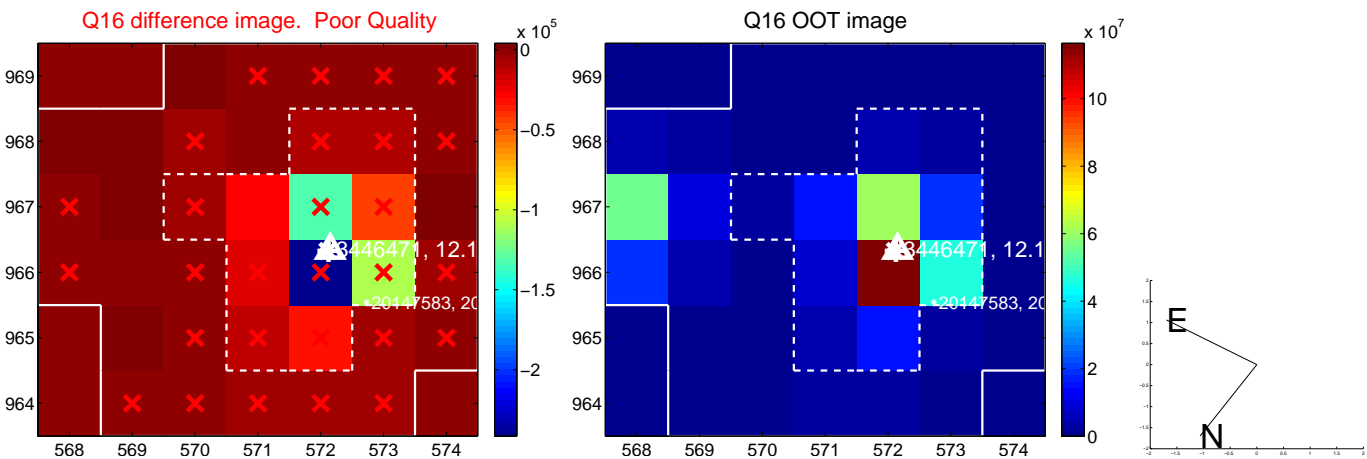
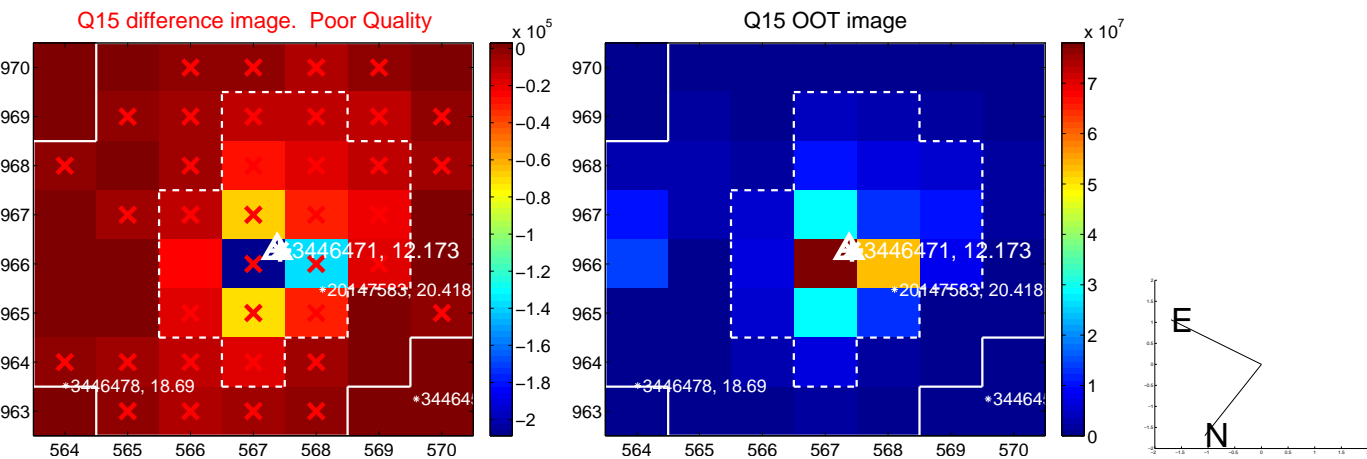
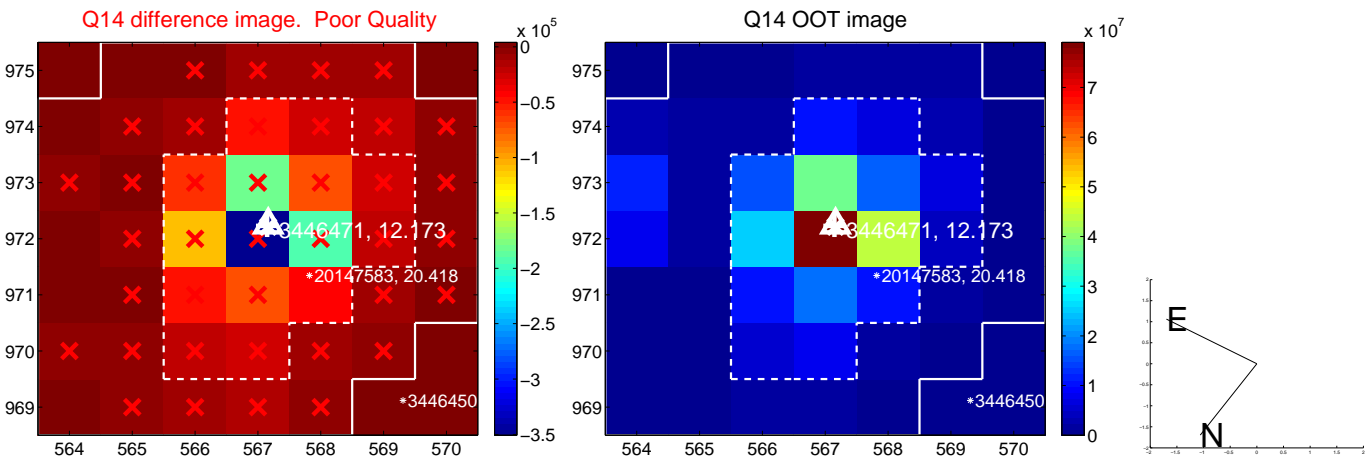
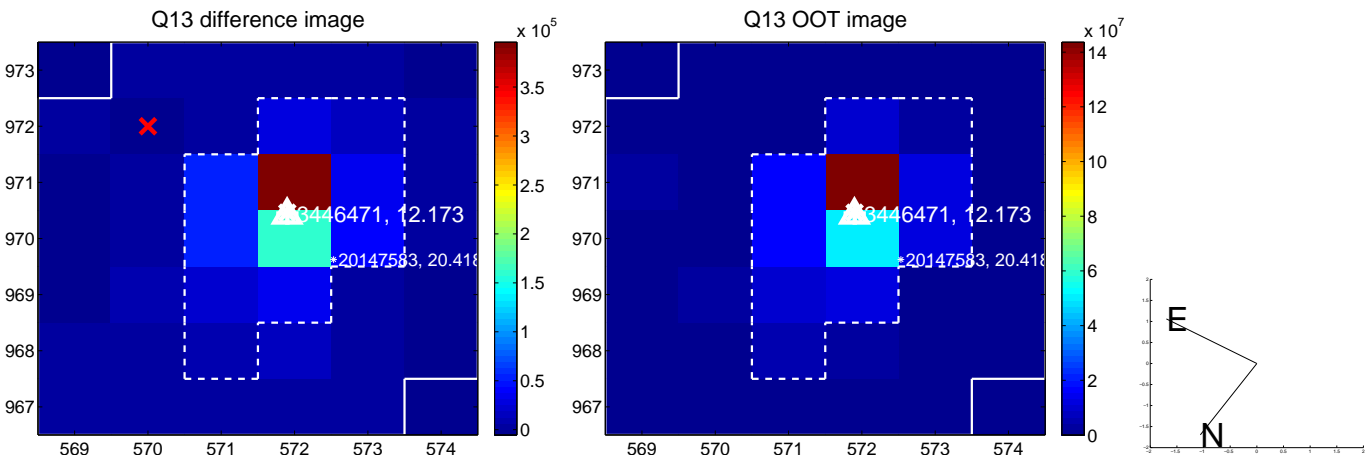
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



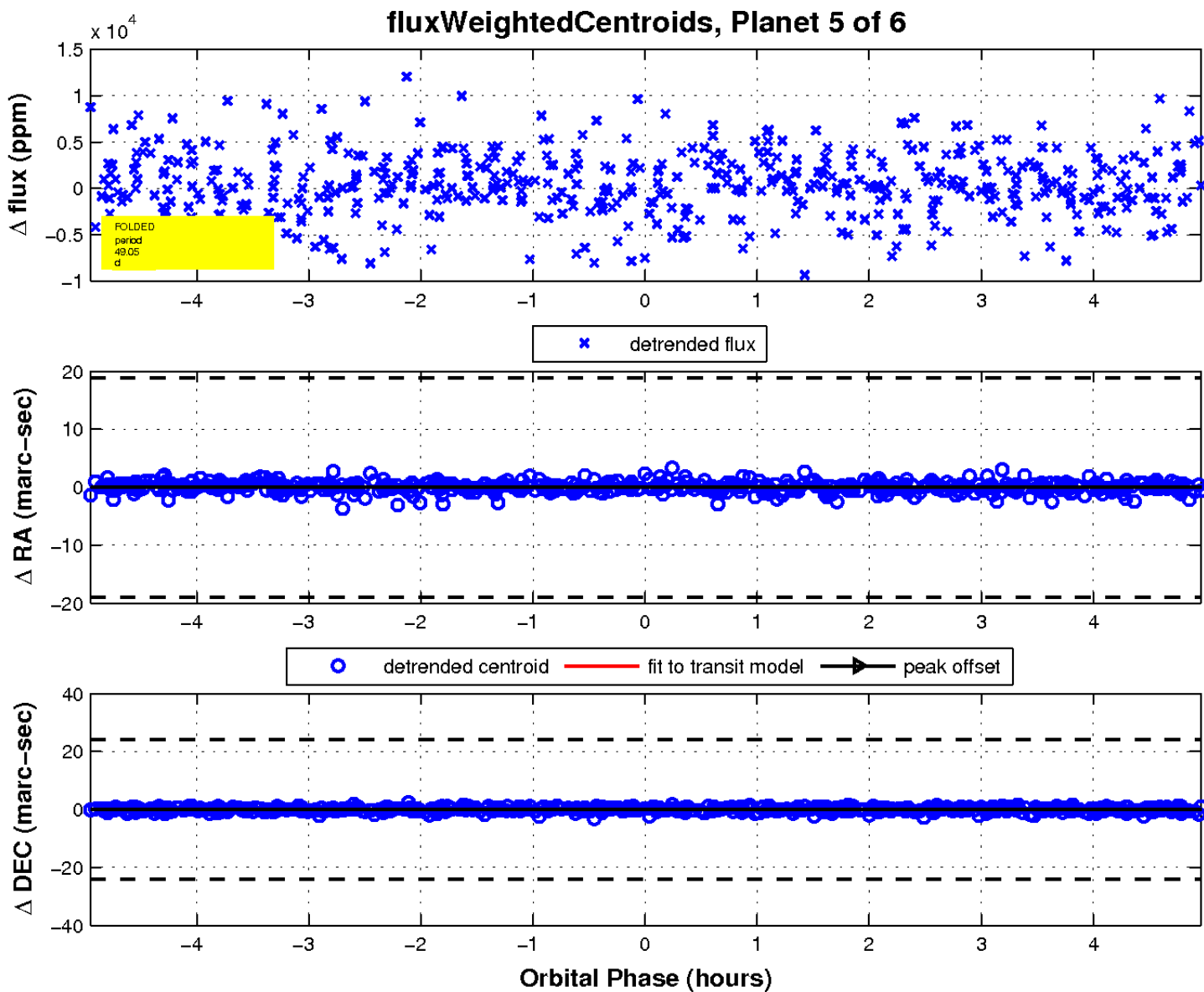
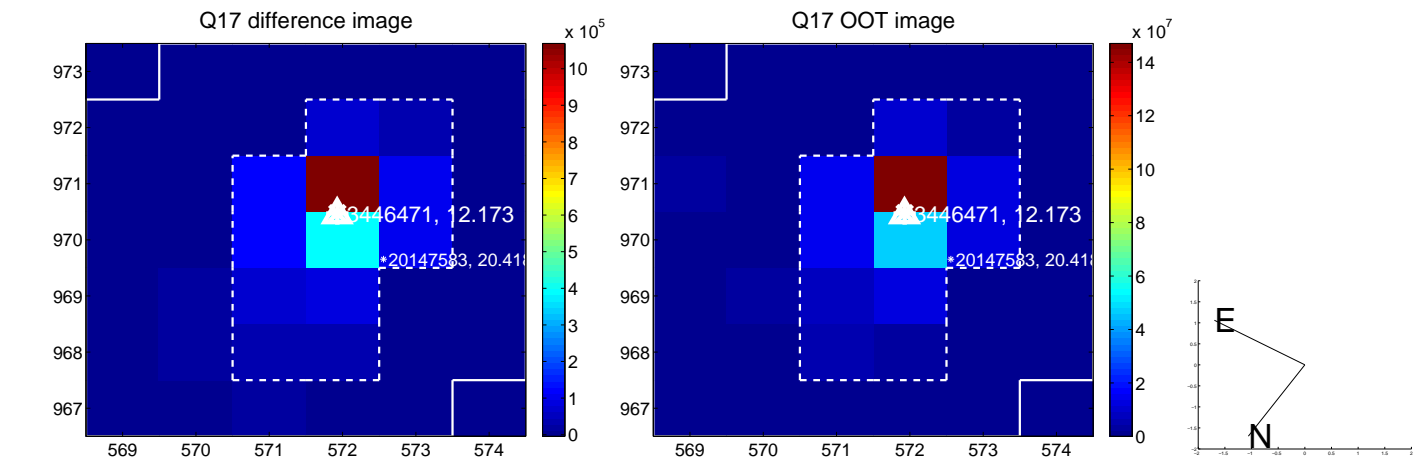
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

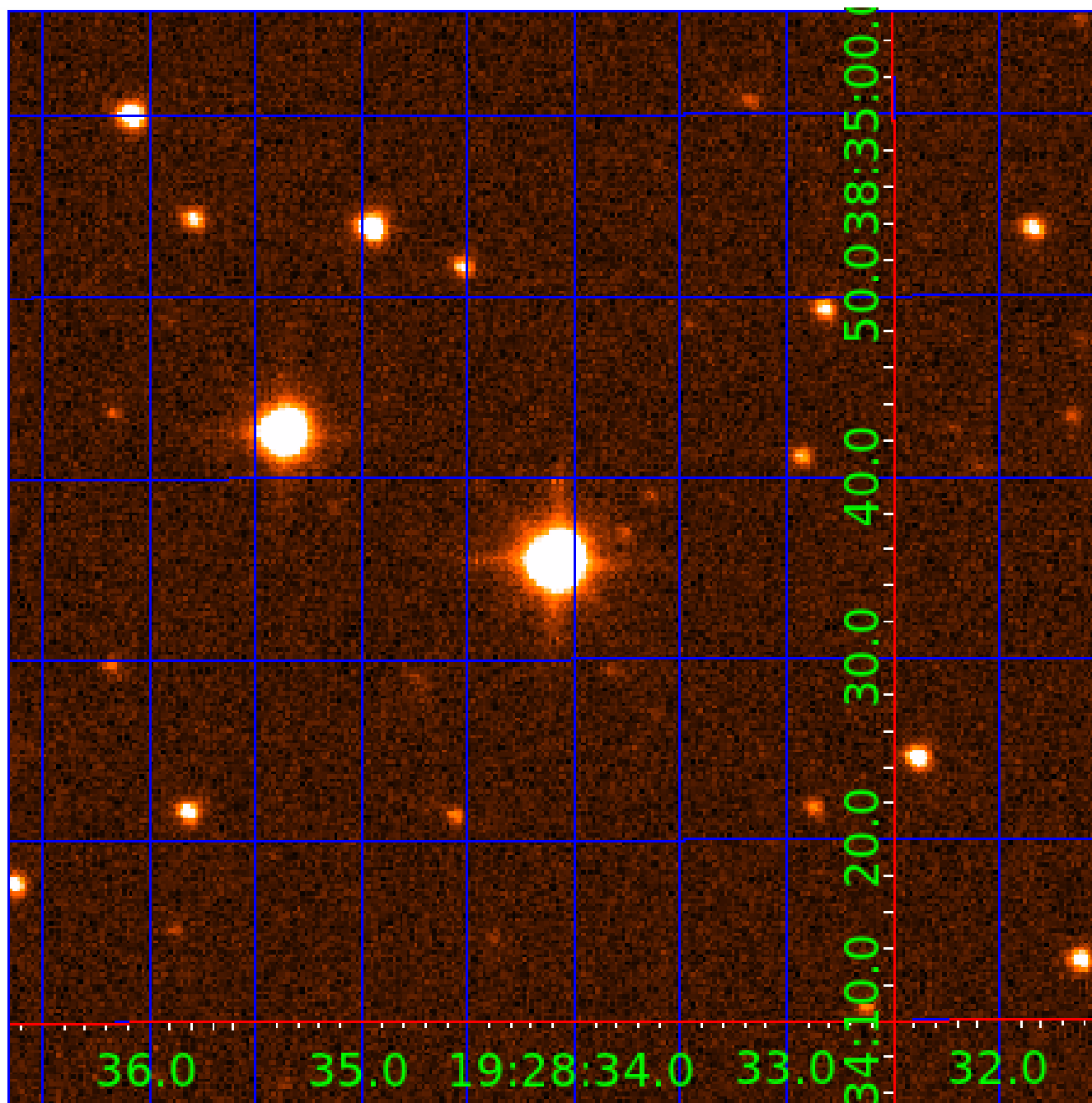


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 003446471

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})
003446471-01	OBS	No	1.032043	132.335455	442.4	6.943	10.2	13.6	3.52	7340	9.09	48896.10
003446471-02	OBS	No	0.746716	131.695923	1881.9	1.178	12.5	18.9	3.52	7340	15.69	75277.38
003446471-03	OBS	No	25.762100	143.172884	8121.5	1.362	8.8	9.2	3.52	7340	56.94	670.24
003446471-04	OBS	No	32.665761	146.287867	4836.2	1.711	8.2	8.8	3.52	7340	26.33	488.37
003446471-05	OBS	No	49.048118	145.173786	5492.5	1.655	7.7	8.6	3.52	7340	28.02	284.04
003446471-06	OBS	No	31.954637	143.557285	3468.9	2.615	7.7	7.1	3.52	7340	21.27	502.91

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003446471-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT
003446471-02	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT
003446471-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
003446471-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
003446471-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
003446471-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT

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

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

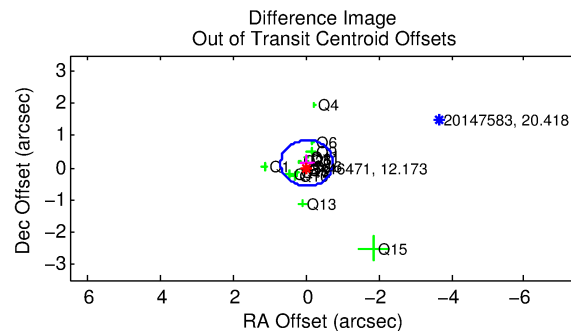
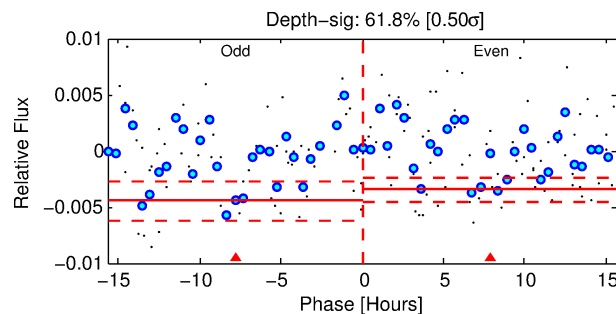
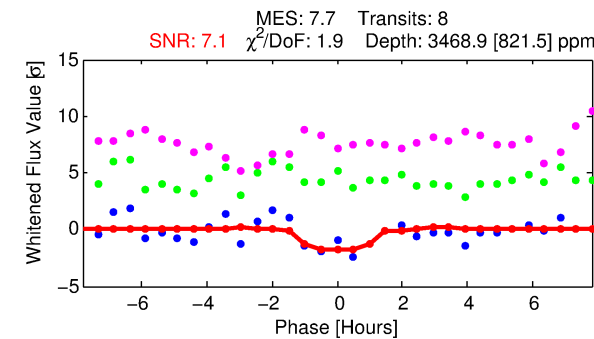
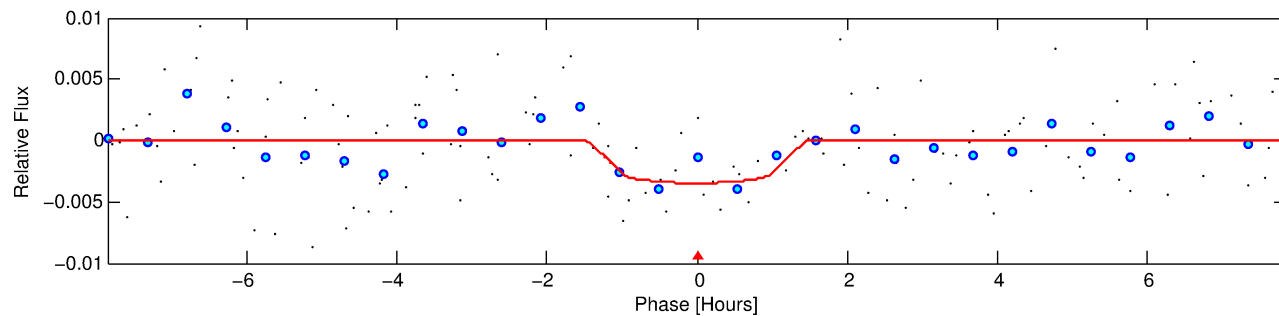
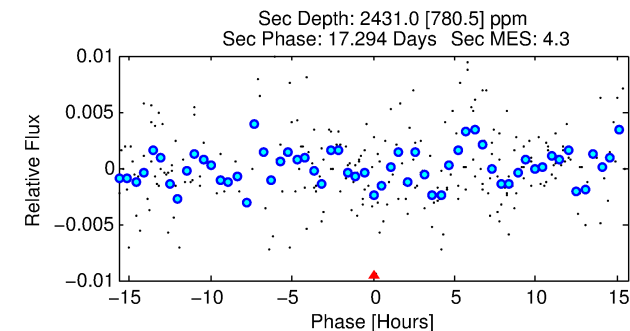
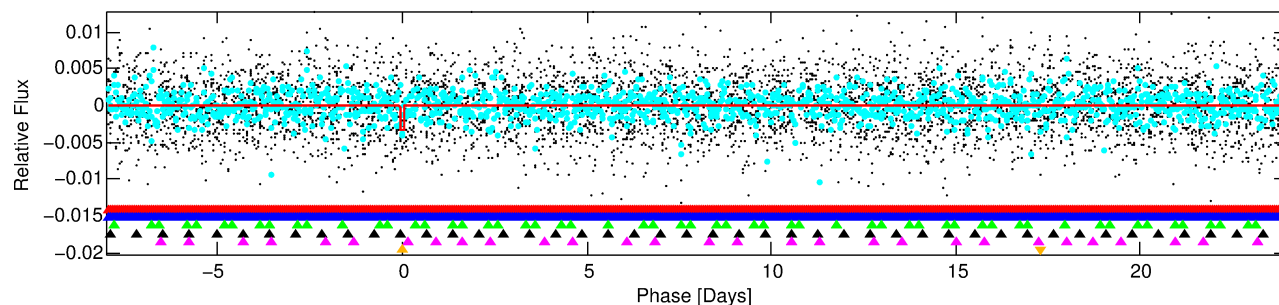
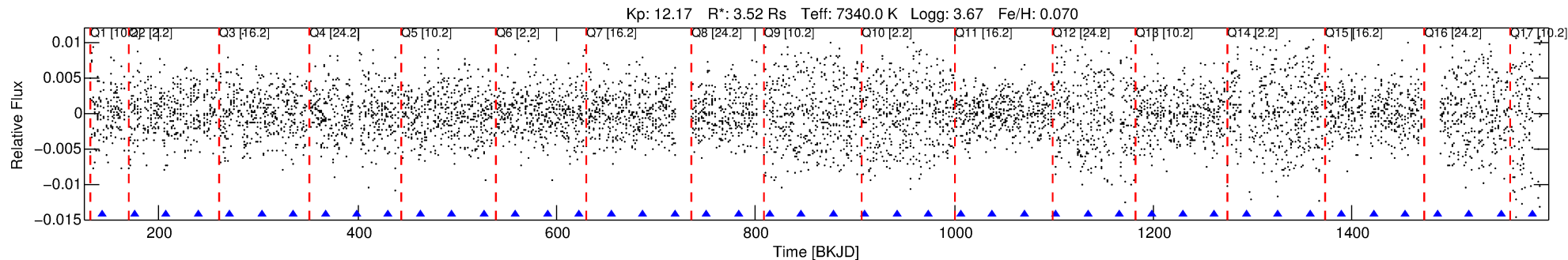
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003446471-06

No Significant Match Found

DV One-Page Summary

KIC: 3446471 Candidate: 6 of 6 Period: 31.955 d



DV Fit Results:

Period = 31.95464 [0.00076] d
Epoch = 143.5573 [0.0140] BKJD
Rp/R* = 0.0554 [0.1519]
a/R* = 92.13 [1428.86]
b = 0.37 [36.05]
Seff = 502.91 [396.12]
Teq = 1208 [238] K
Rp = 21.27 [59.33] Re
a = 0.2533 [0.1213] AU
Ag = 189.55 [1052.20] [0.18σ]
Teff = 6927 [9527] K [0.60σ]

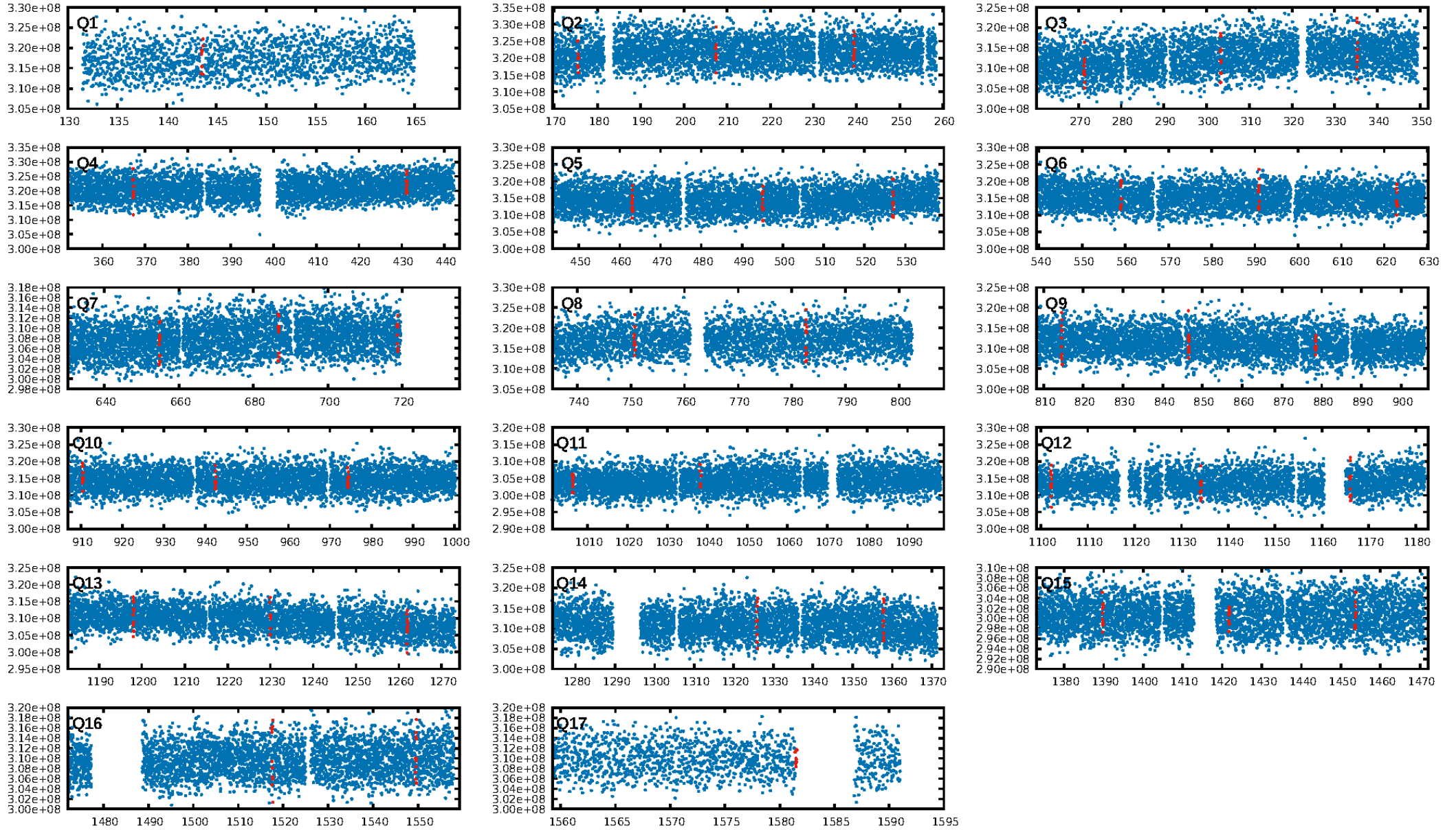
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [50.41σ]
LongPeriod-sig: 100.0% [5.46σ]
ModelChiSquare2-sig: 73.2%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.15e-09
RollingBand-fgt: 1.00 [8/8]
GhostDiagnostic-chr: 8.255
Centroid-sig: 1.0%
Centroid-so: 0.195 arcsec [5.09σ]
OotOffset-rm: 0.141 arcsec [0.59σ]
KicOffset-rm: 0.152 arcsec [0.79σ]
OotOffset-st: 3/4/4/4 [15]
KicOffset-st: 3/4/4/4 [15]
DiffImageQuality-fgm: 0.40 [6/15]
DiffImageOverlap-fno: 0.00 [0/15]

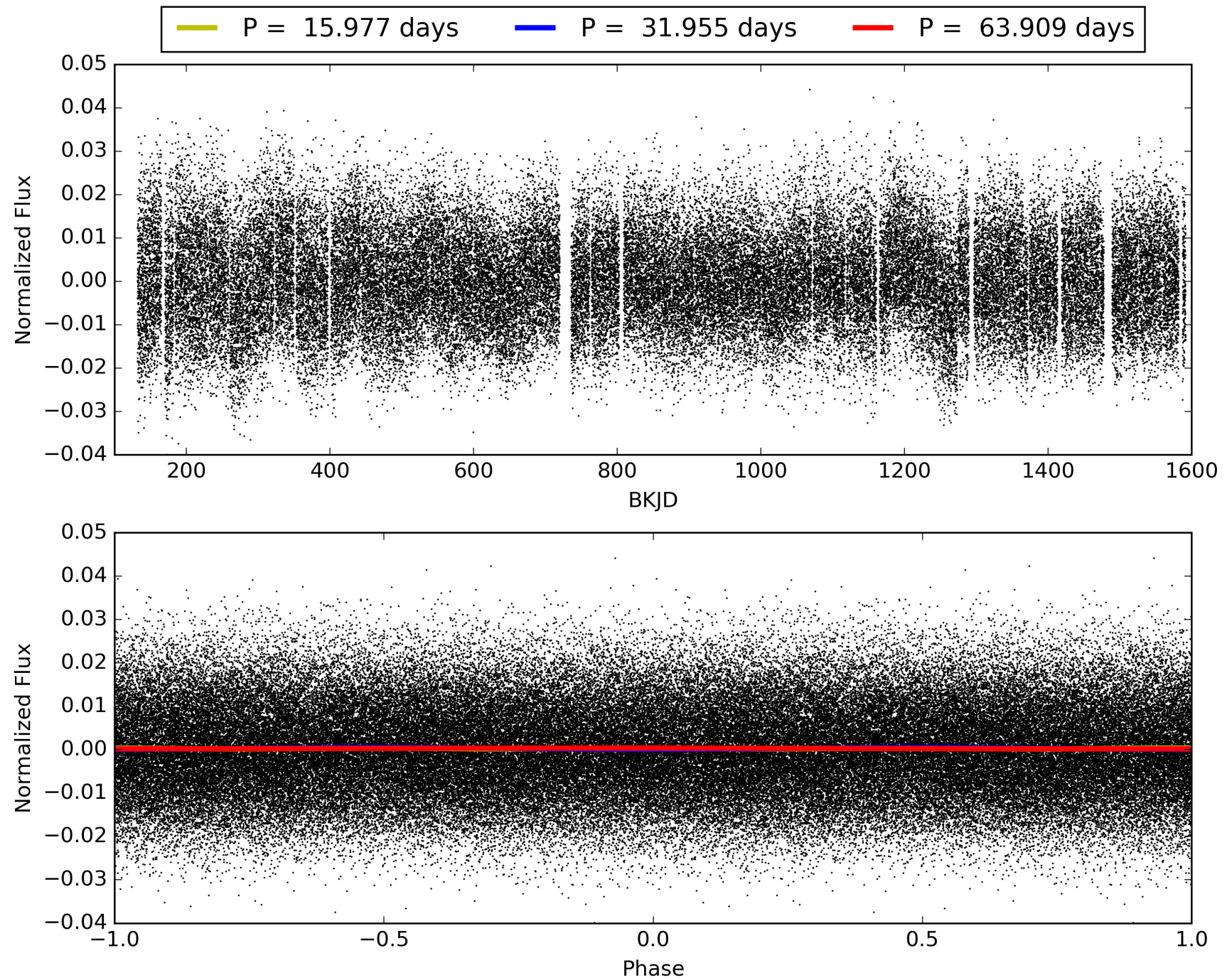
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 06:34:39 Z

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

TCE 003446471-06, PDC Light Curves

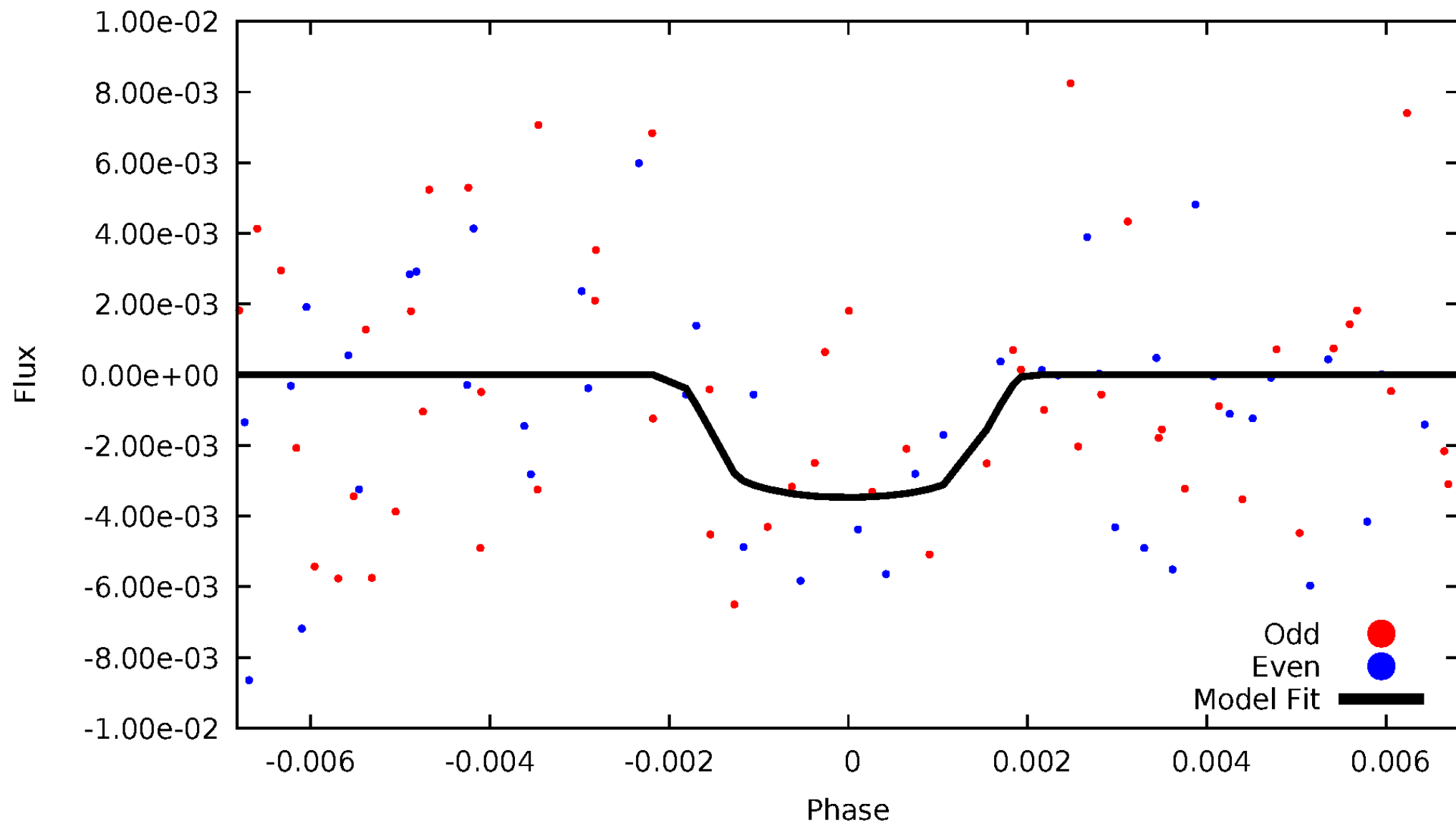


TCE 003446471-06



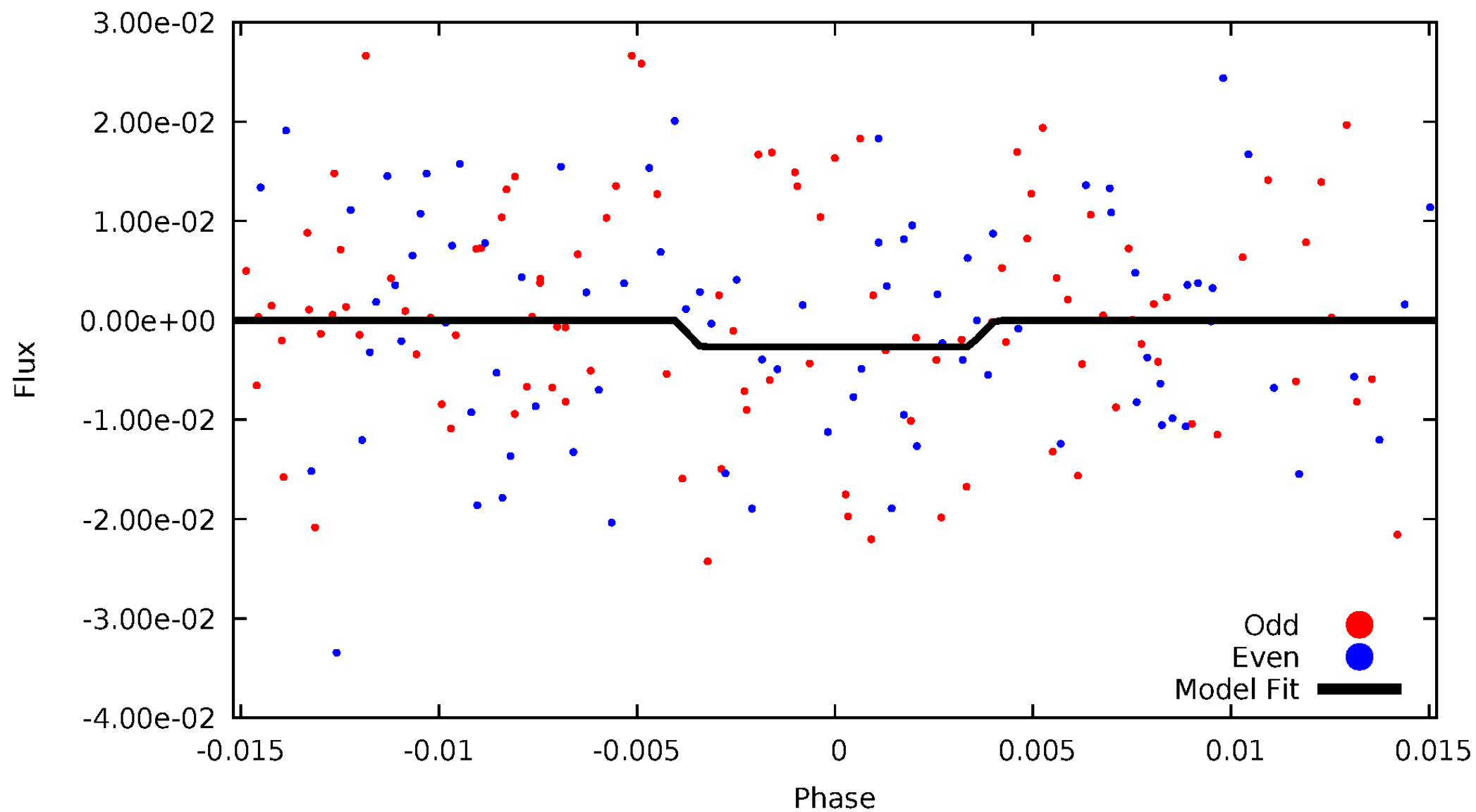
DV Odd/Even

TCE 003446471-06



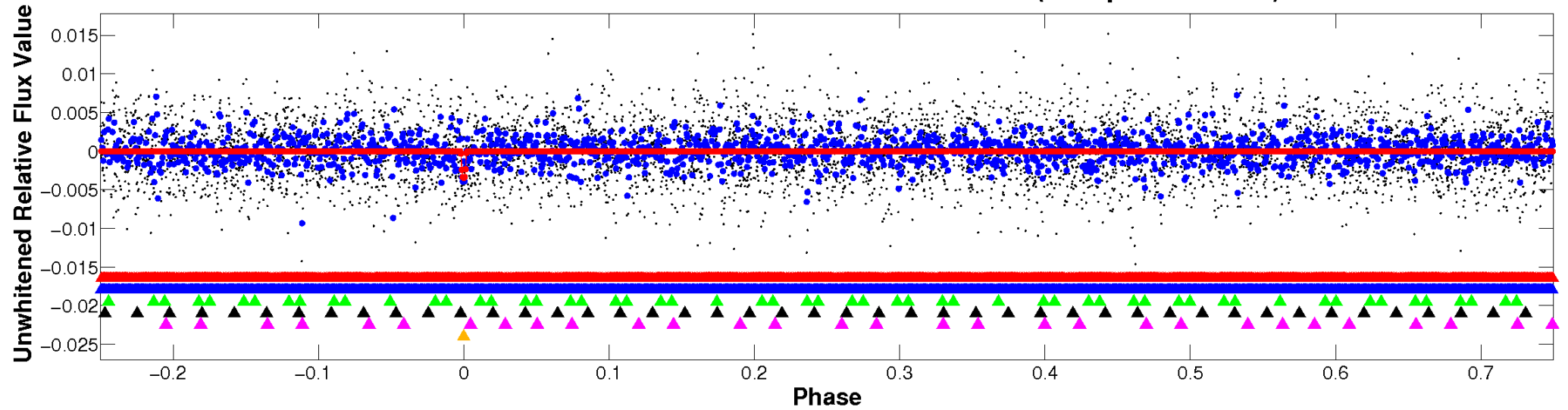
ALT Odd/Even

TCE 003446471-06

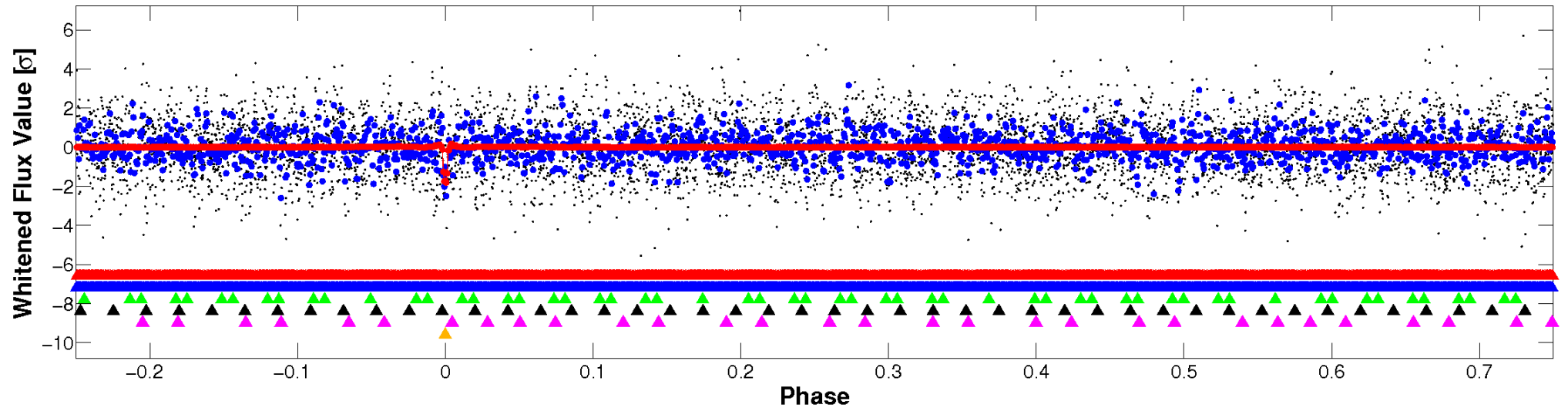


Non-Whitened Vs. Whitened Light Curve

Planet 6 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

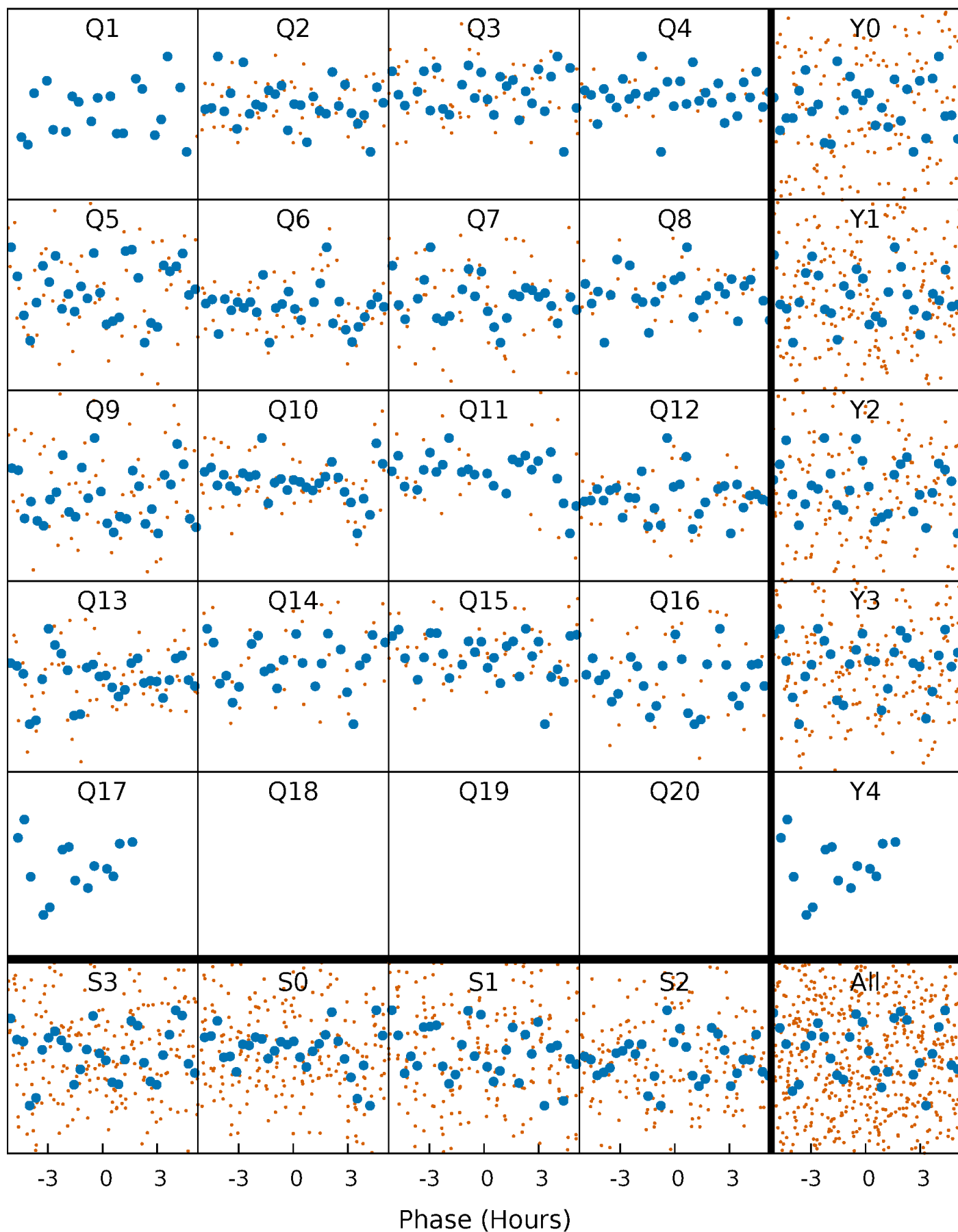


Planet 6 : Phased Whitened Flux Time Series (Fit Epoch/Period)



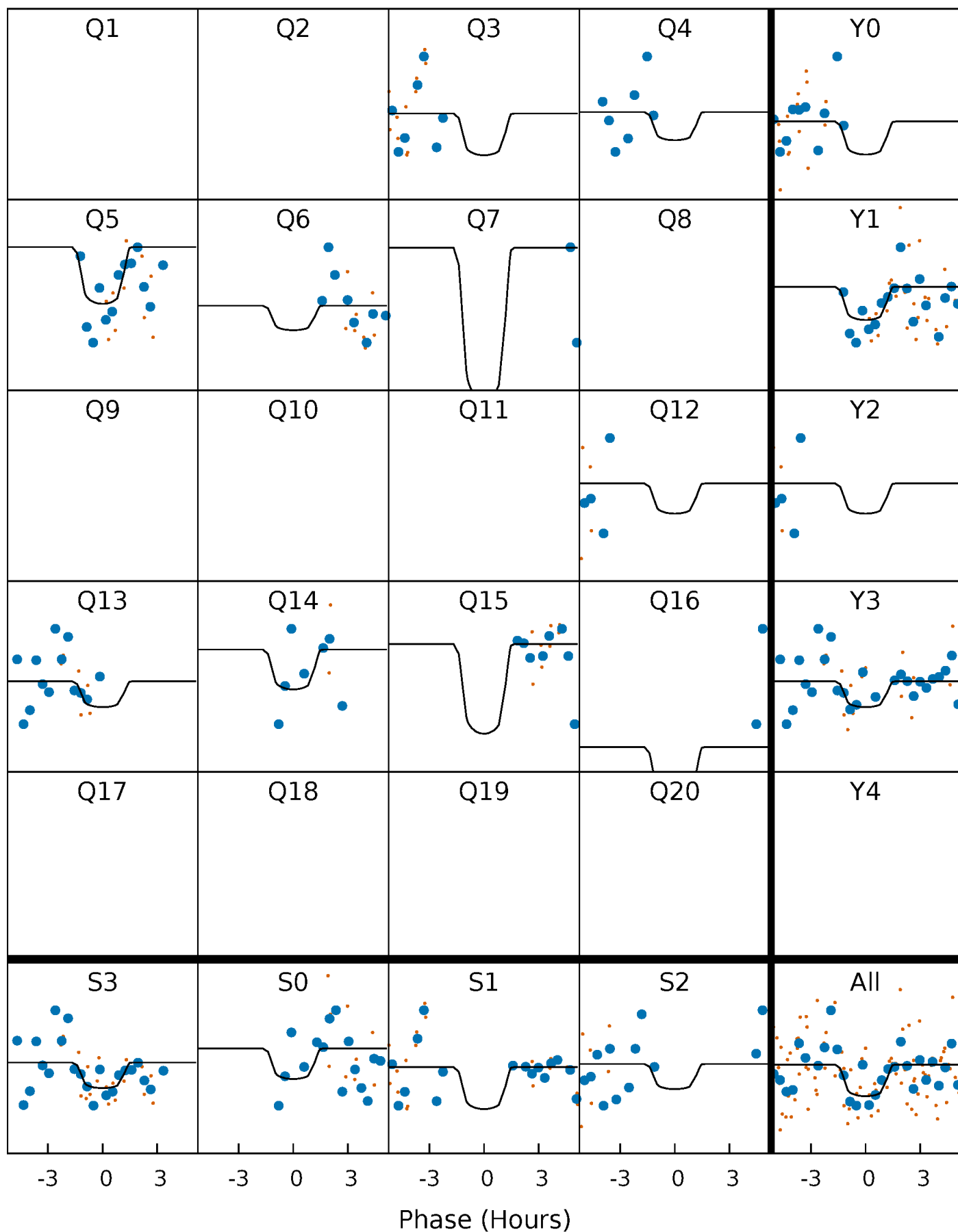
PDC Quarter-Phased Transit Curves

TCE 003446471-06 P= 31.954637 Days $T_0=143.557285$ (BKJD)



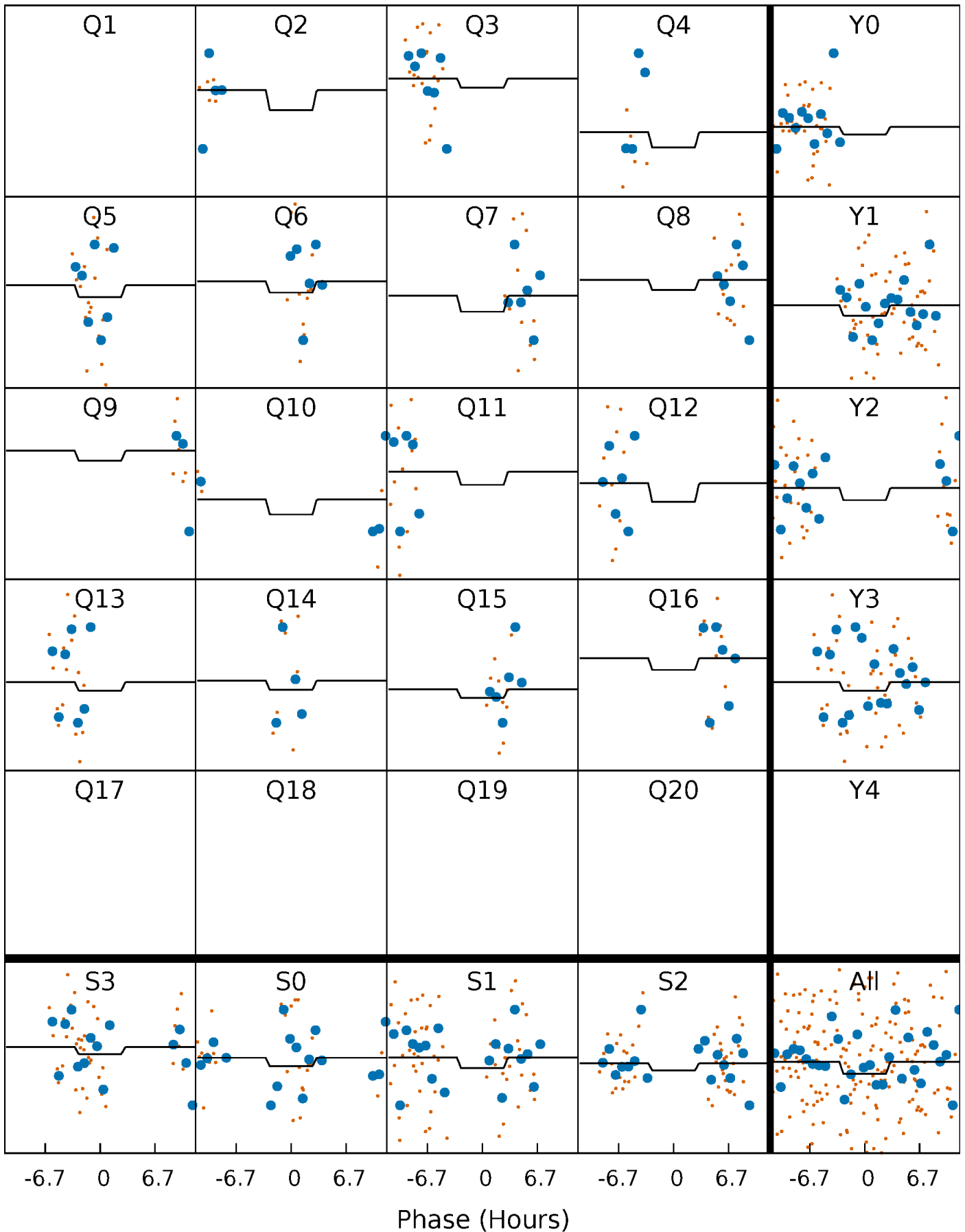
DV Quarter-Phased Transit Curves

TCE 003446471-06 P= 31.954637 Days $T_0=143.557285$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

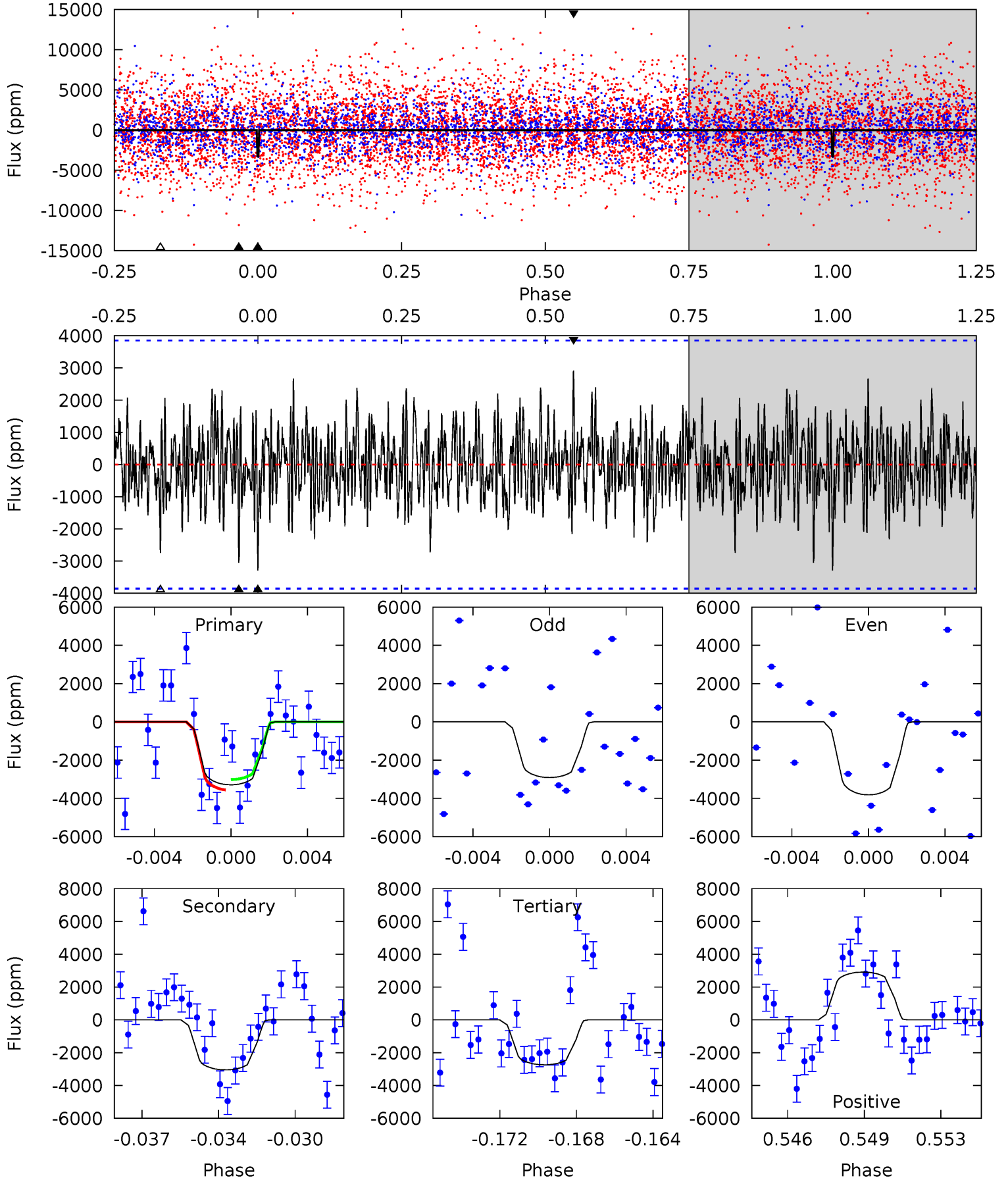
TCE 003446471-06 P= 31.953466 Days $T_0=143.651695$ (BKJD)



DV Model-Shift Uniqueness Test

003446471-06, P = 31.954637 Days, E = 111.602648 Days

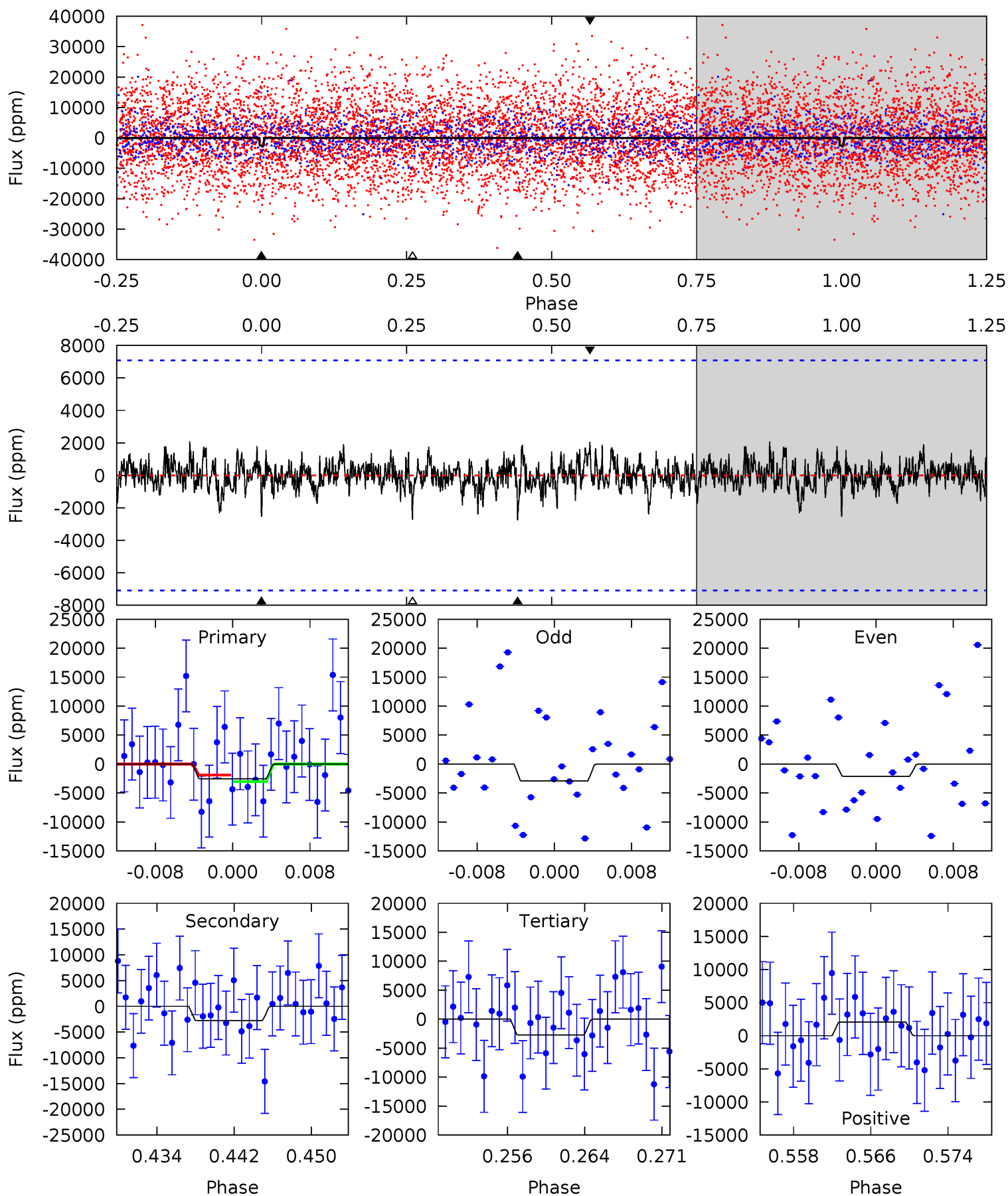
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.45	4.12	3.70	3.94	5.21	2.90	1.24	0.74	0.51	0.42	0.18	0.60	0.91	0.47	0.37



Alt Model-Shift Uniqueness Test

003446471-06, P = 31.953466 Days, E = 111.698229 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1.82	1.98	1.95	1.47	5.07	2.66	0.50	-0.14	0.34	0.02	0.50	0.29	0.82	0.43	0.41



Stellar Parameters For KIC 003446471

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	7340^{+205}_{-334}	$3.671^{+0.450}_{-0.075}$	$0.070^{+0.200}_{-0.300}$	$3.522^{+0.412}_{-1.753}$	$2.123^{+0.244}_{-0.609}$	$0.068^{+0.293}_{-0.018}$
	+3%/-5%	+12%/-2%	+286%/-429%	+12%/-50%	+11%/-29%	+429%/-26%
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 003446471-06 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-3049 ± 739	$42.12^{+46.21}_{-29.70}$	1630^{+110}_{-191}	4907^{+4711}_{-1117}	59^{+613}_{-45}
Alt.	-2759 ± 1397	$42.47^{+43.98}_{-28.04}$	1626^{+117}_{-186}	4798^{+3352}_{-1257}	50^{+440}_{-40}

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 $A_{obs} \gg 1.0$

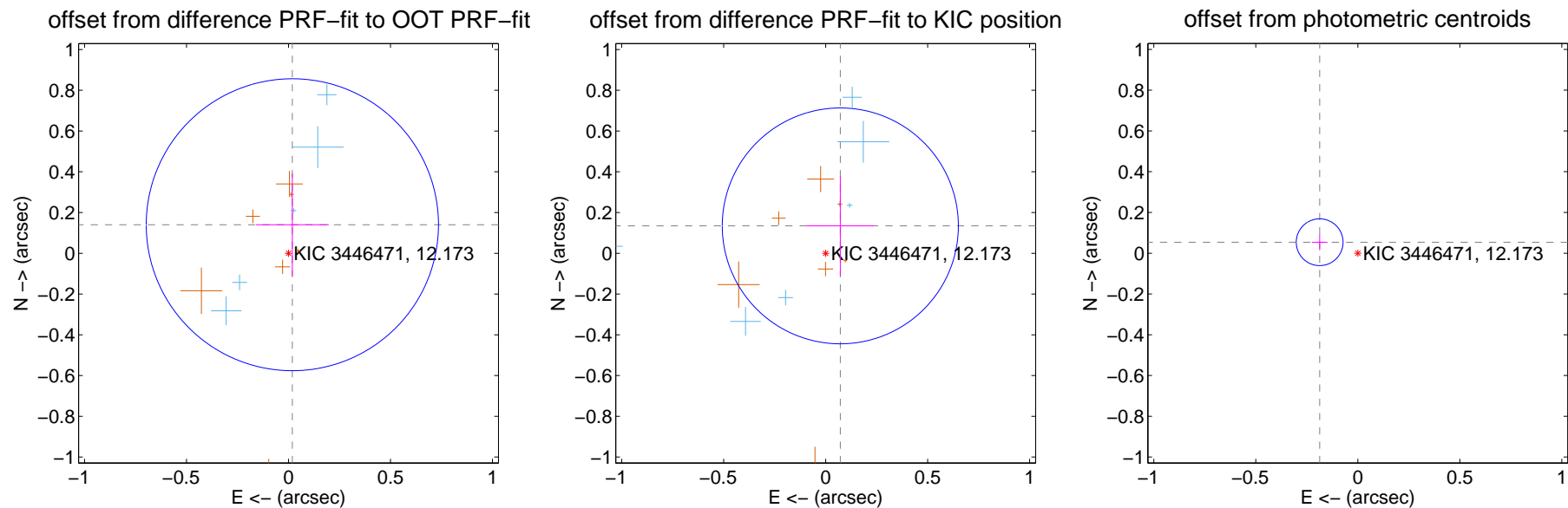
DV Centroid Data

Supplemental centroid analysis for 003446471-06. Kepler magnitude: 12.17. Transit SNR 7.09

There are 6 quarters with good PRF difference image offsets

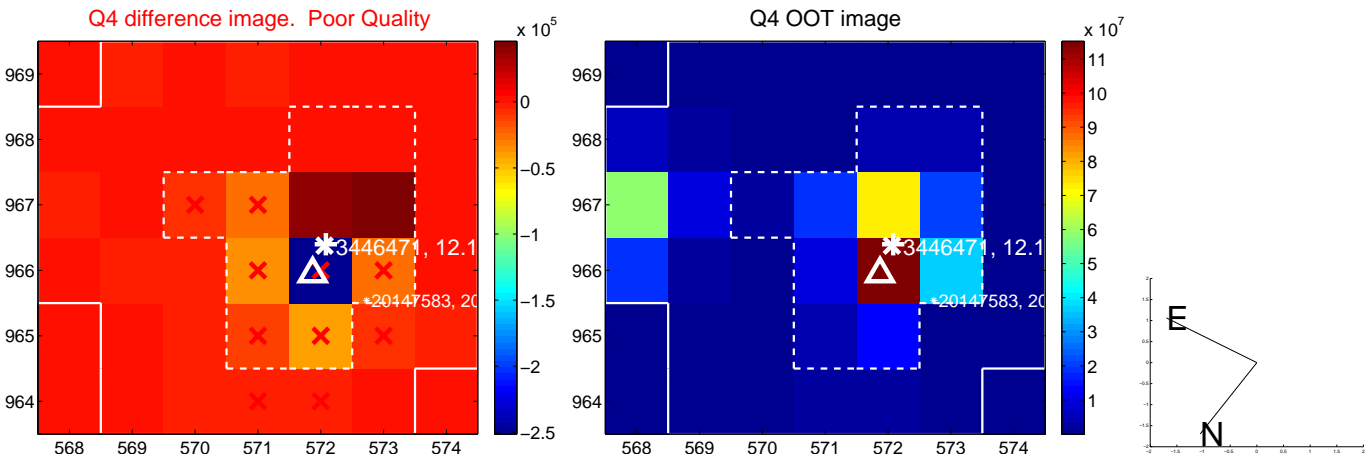
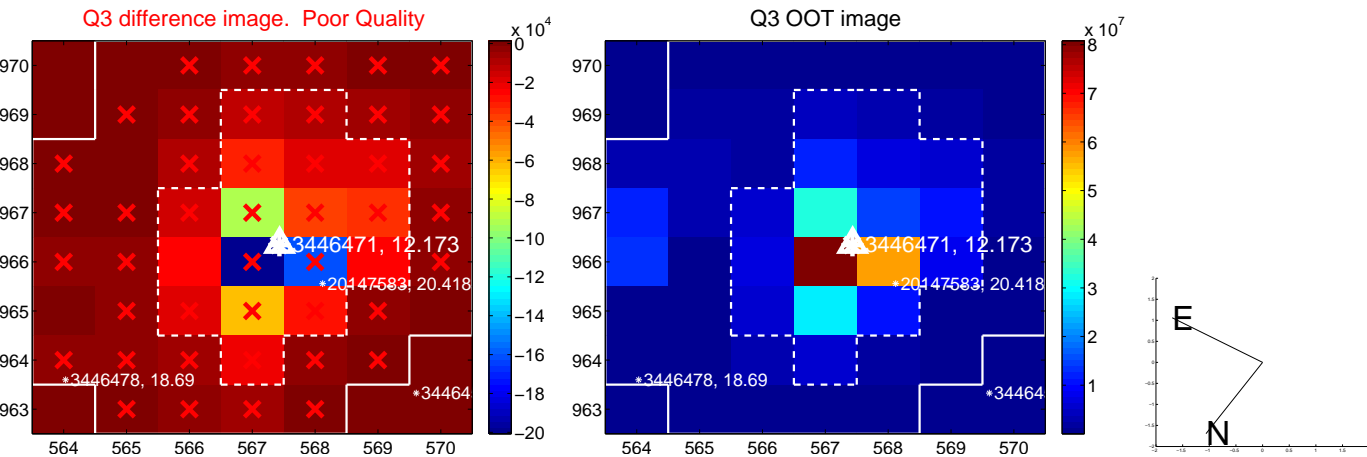
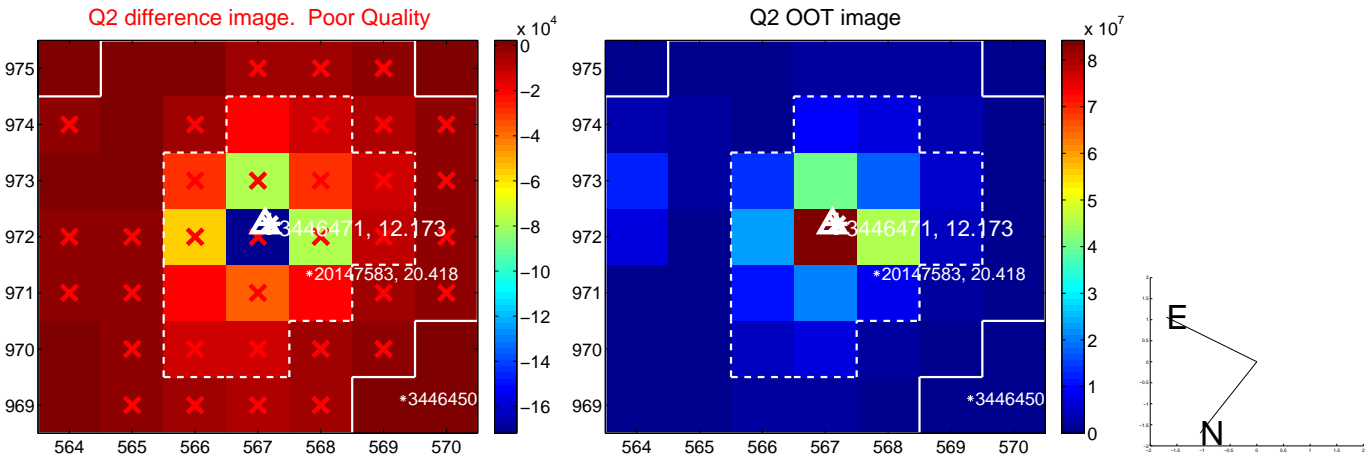
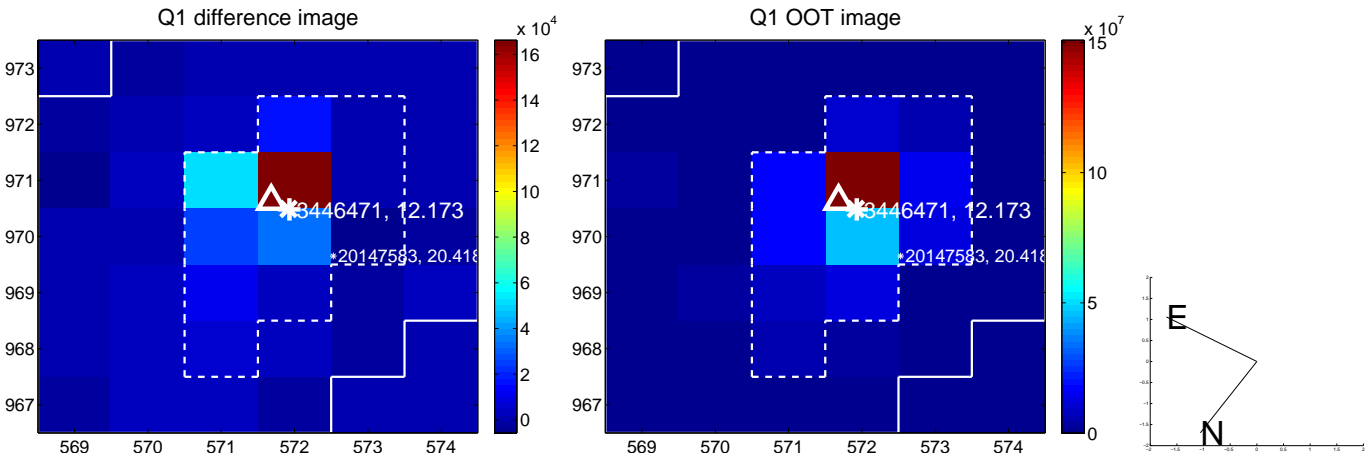
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.141 ± 0.239	0.59	-0.019 ± 0.179	0.140 ± 0.251
PRF-fit source offset from KIC position	0.152 ± 0.193	0.79	-0.072 ± 0.166	0.134 ± 0.245
photometric centroid source offset	0.19 ± 0.04	5.09	0.19 ± 0.04	0.05 ± 0.04

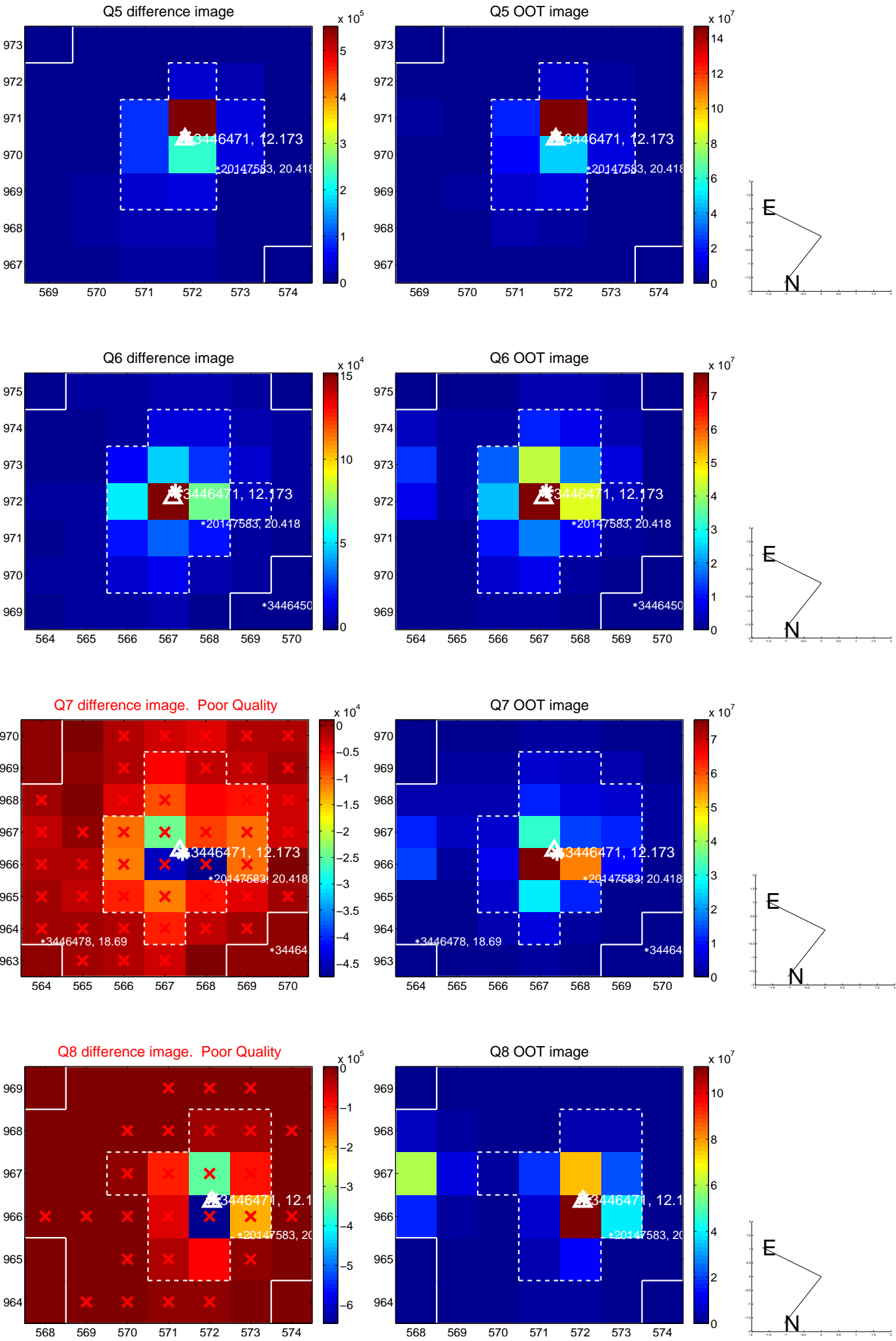


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

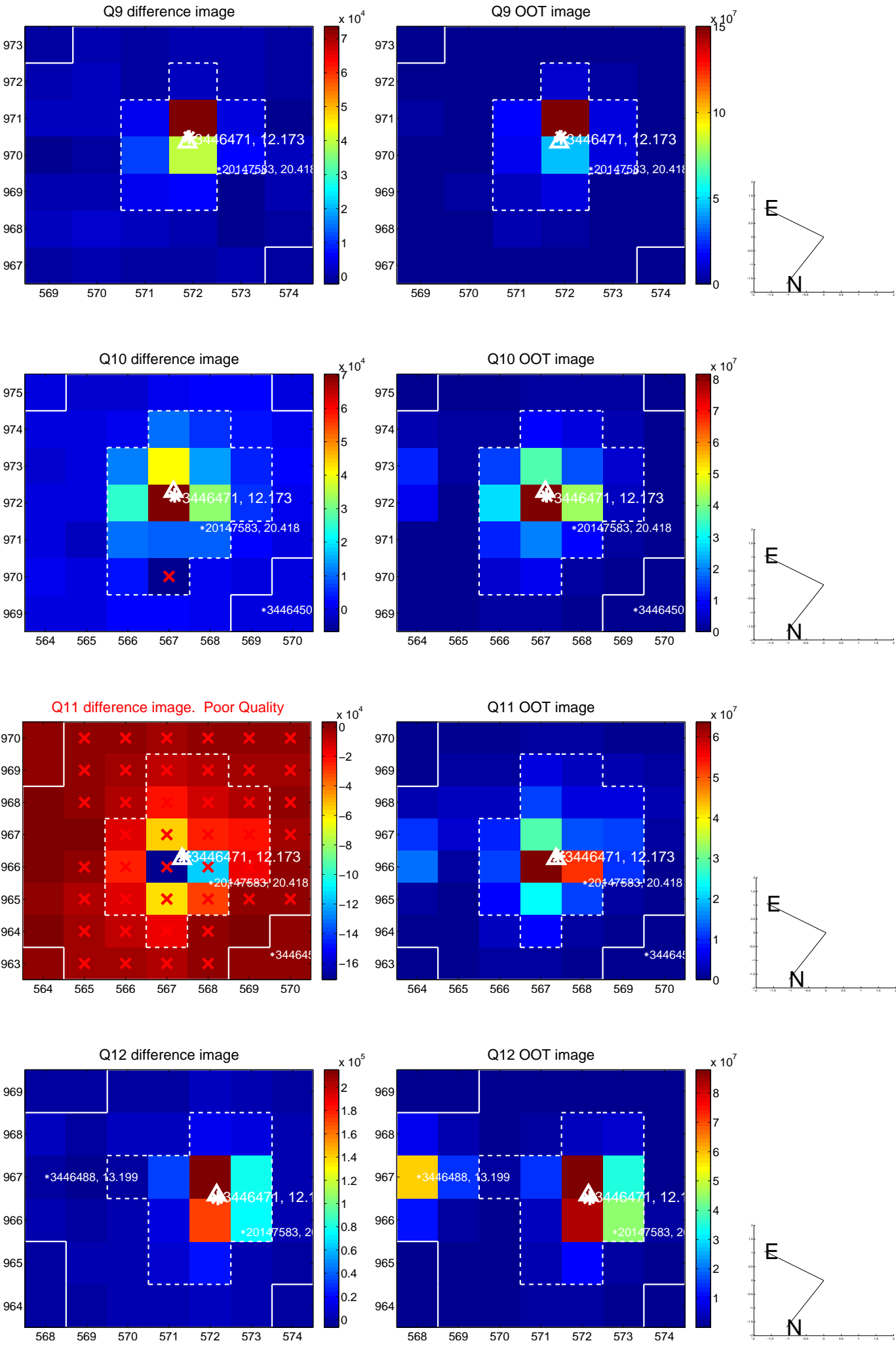
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



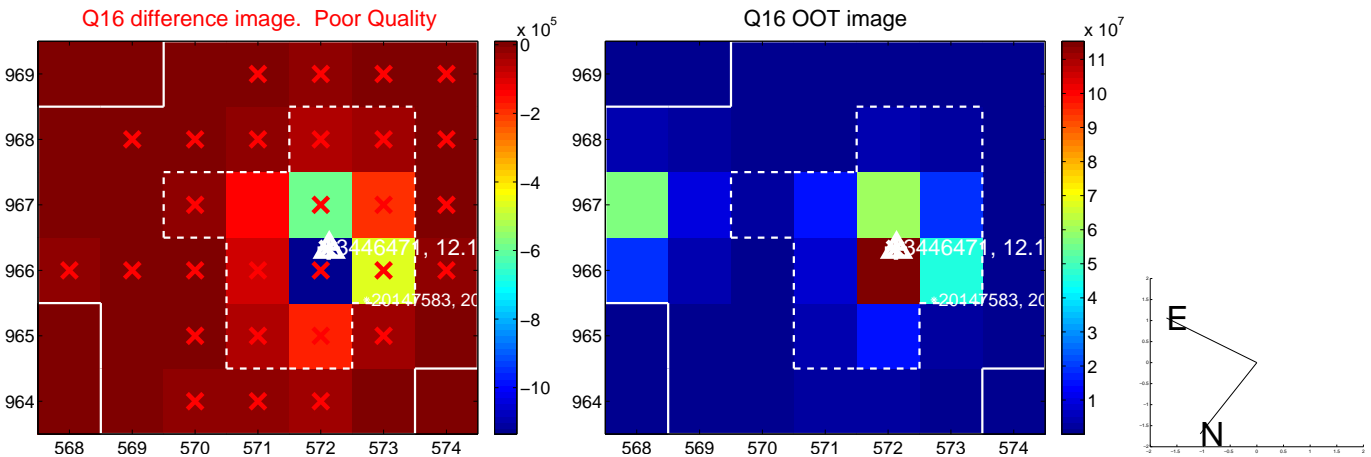
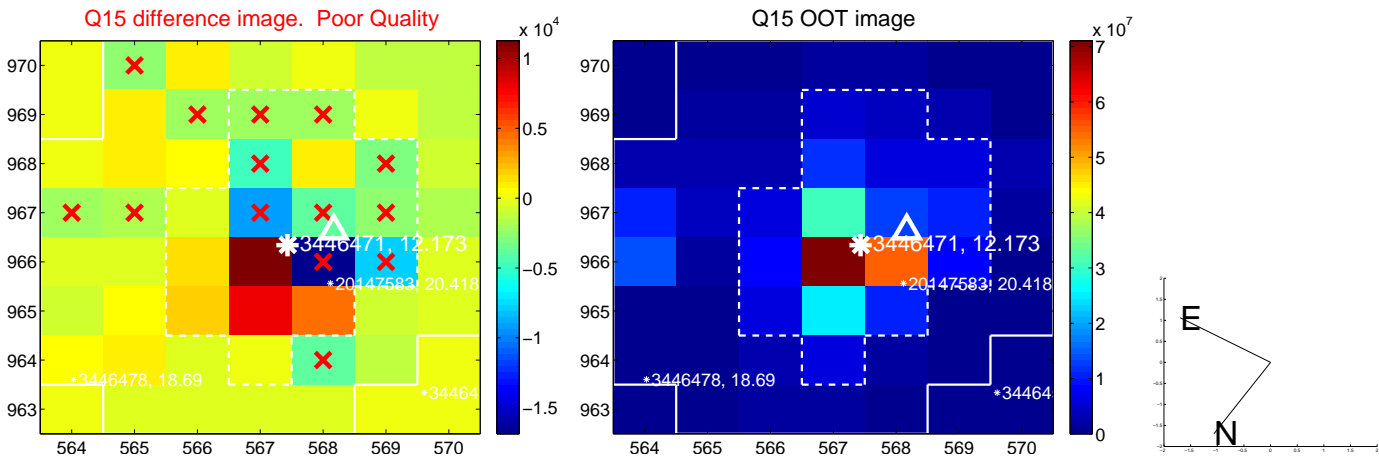
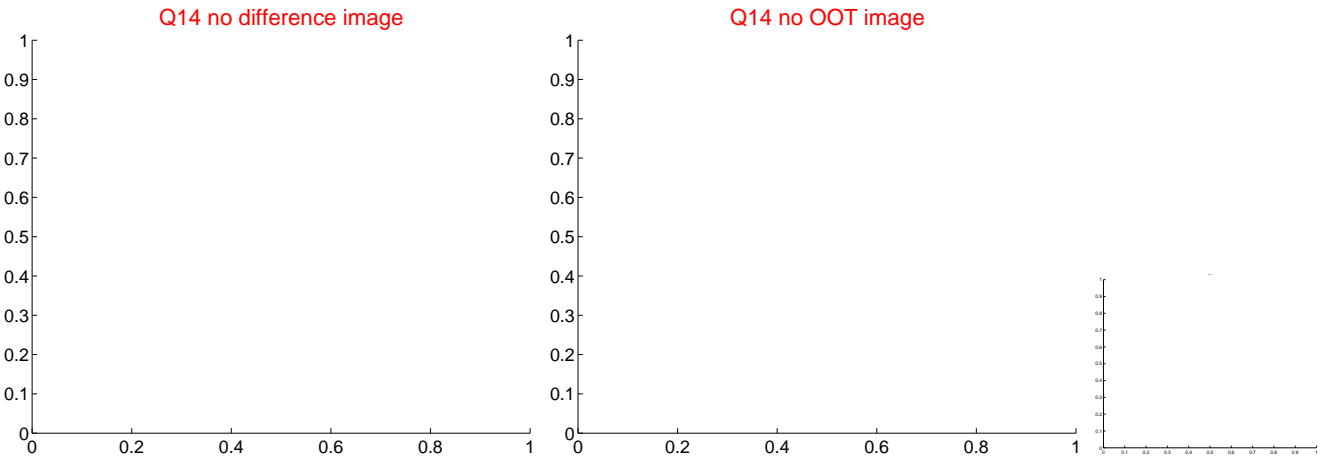
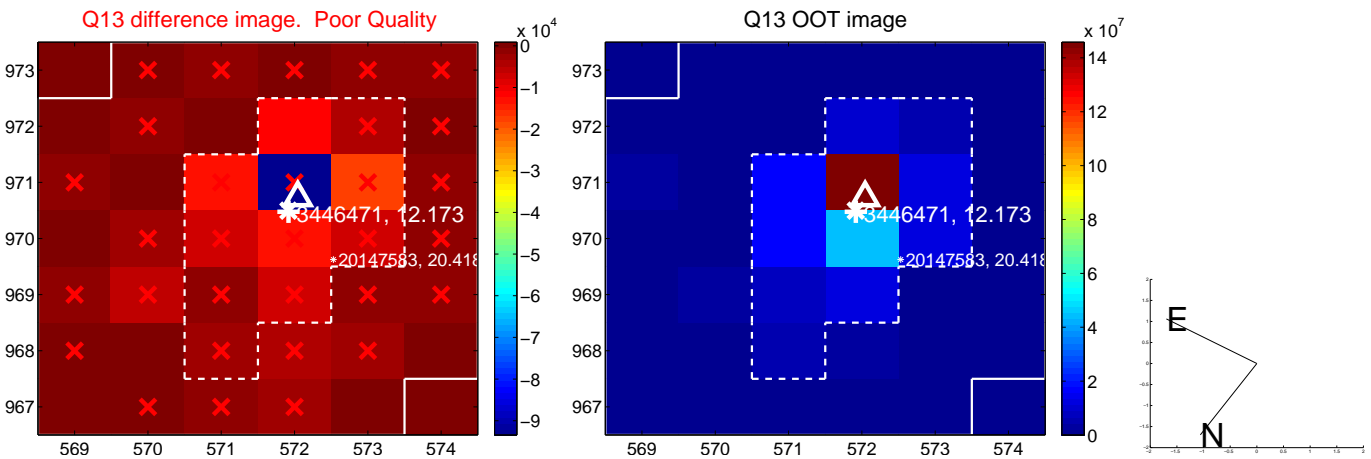
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



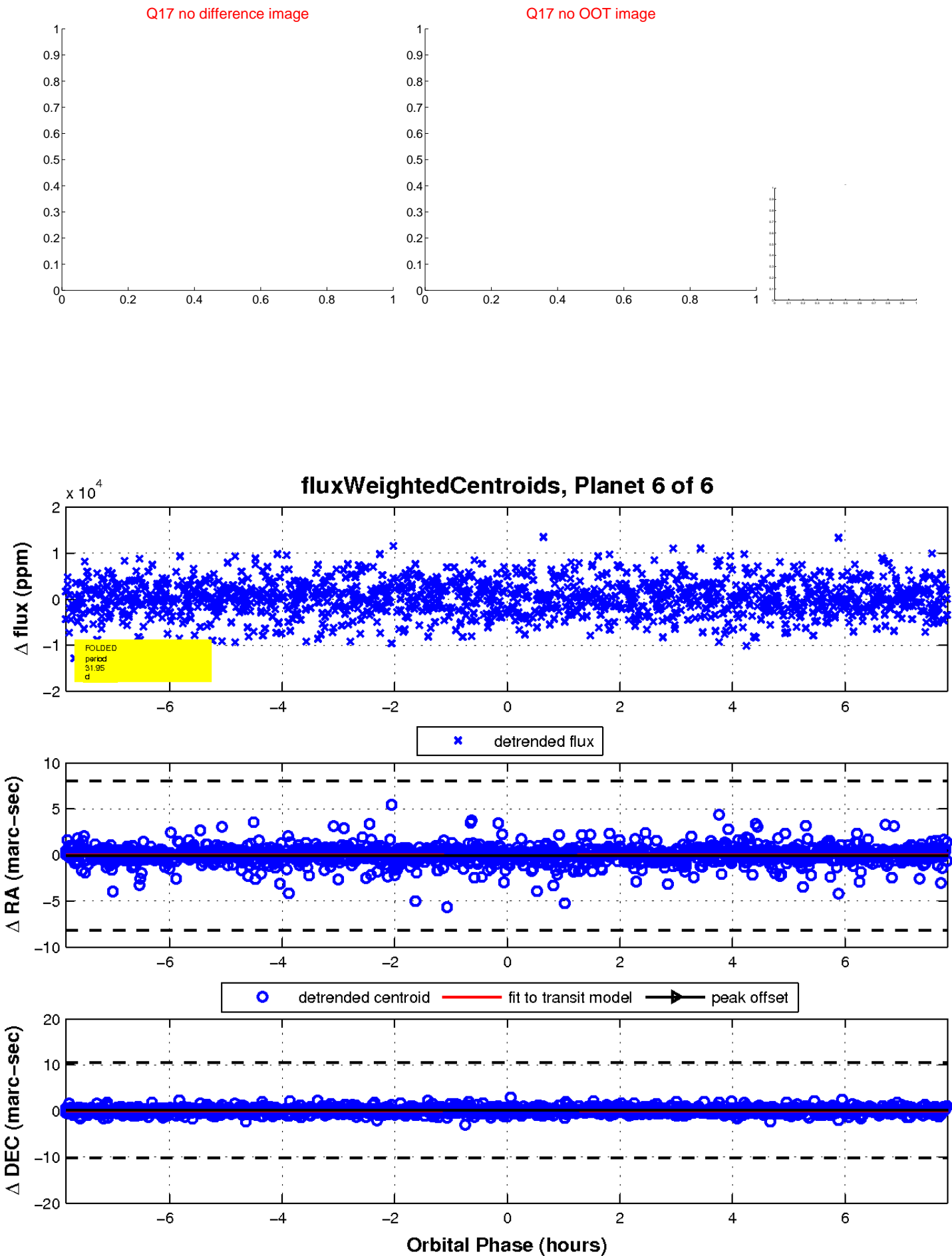
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

