

KIC 005905234

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})
005905234-01	OBS	No	0.691621	132.096029	23.2	3.982	10.2	7.7	1.49	6971	0.73	16179.21
005905234-02	OBS	No	132.550913	244.057038	434.6	2.309	8.1	7.6	1.49	6971	3.36	14.64

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005905234-01	OBS	FP	0.00	1	0	0	0	LPP_DV
005905234-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_SKYE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT

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

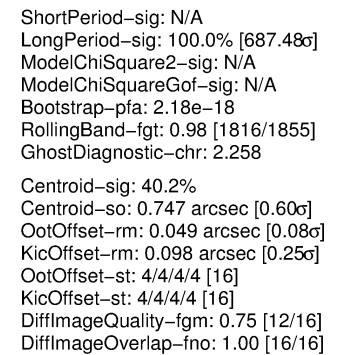
N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

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

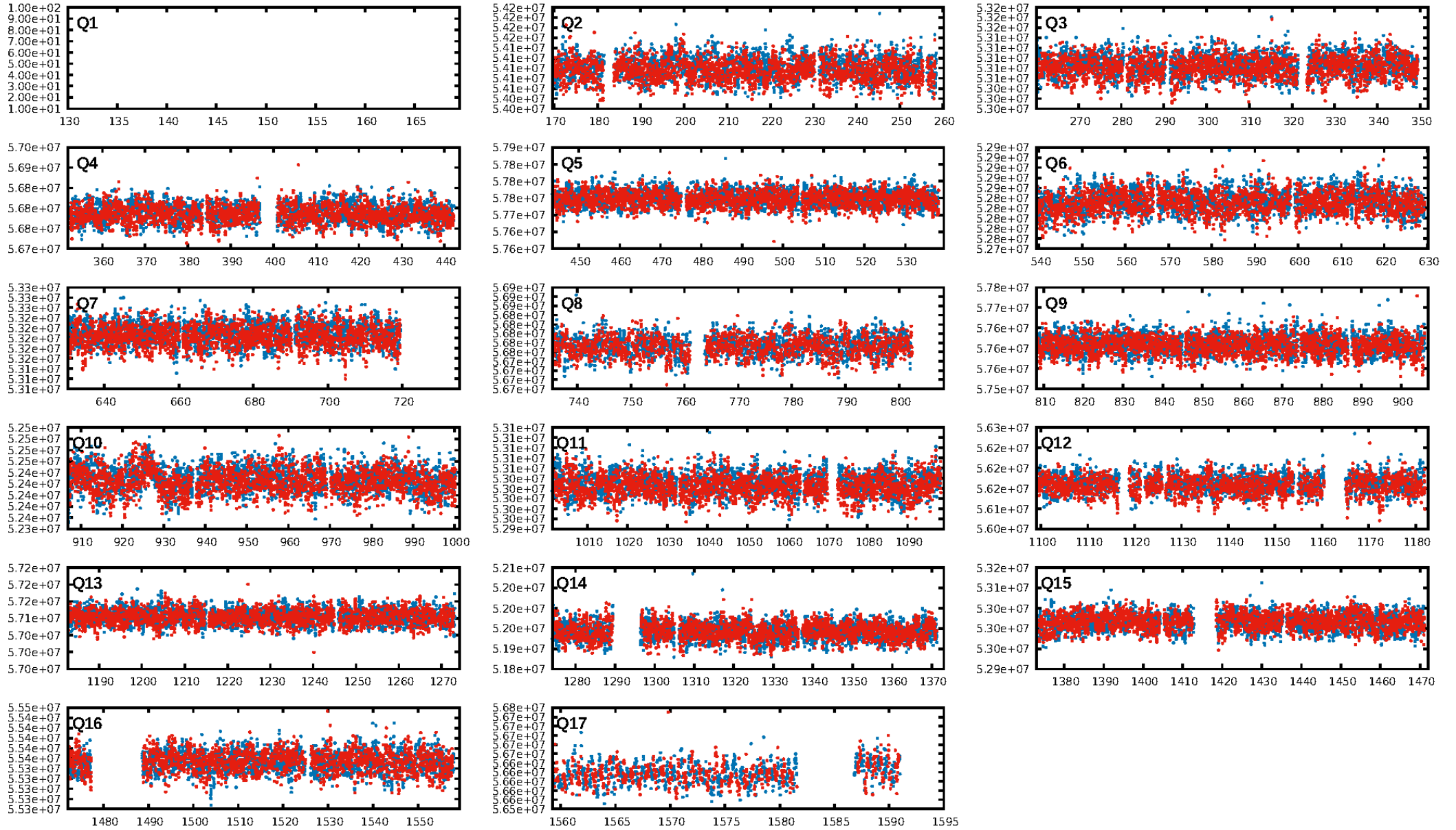
Ephemeris Match Information For 005905234-01

No Significant Match Found

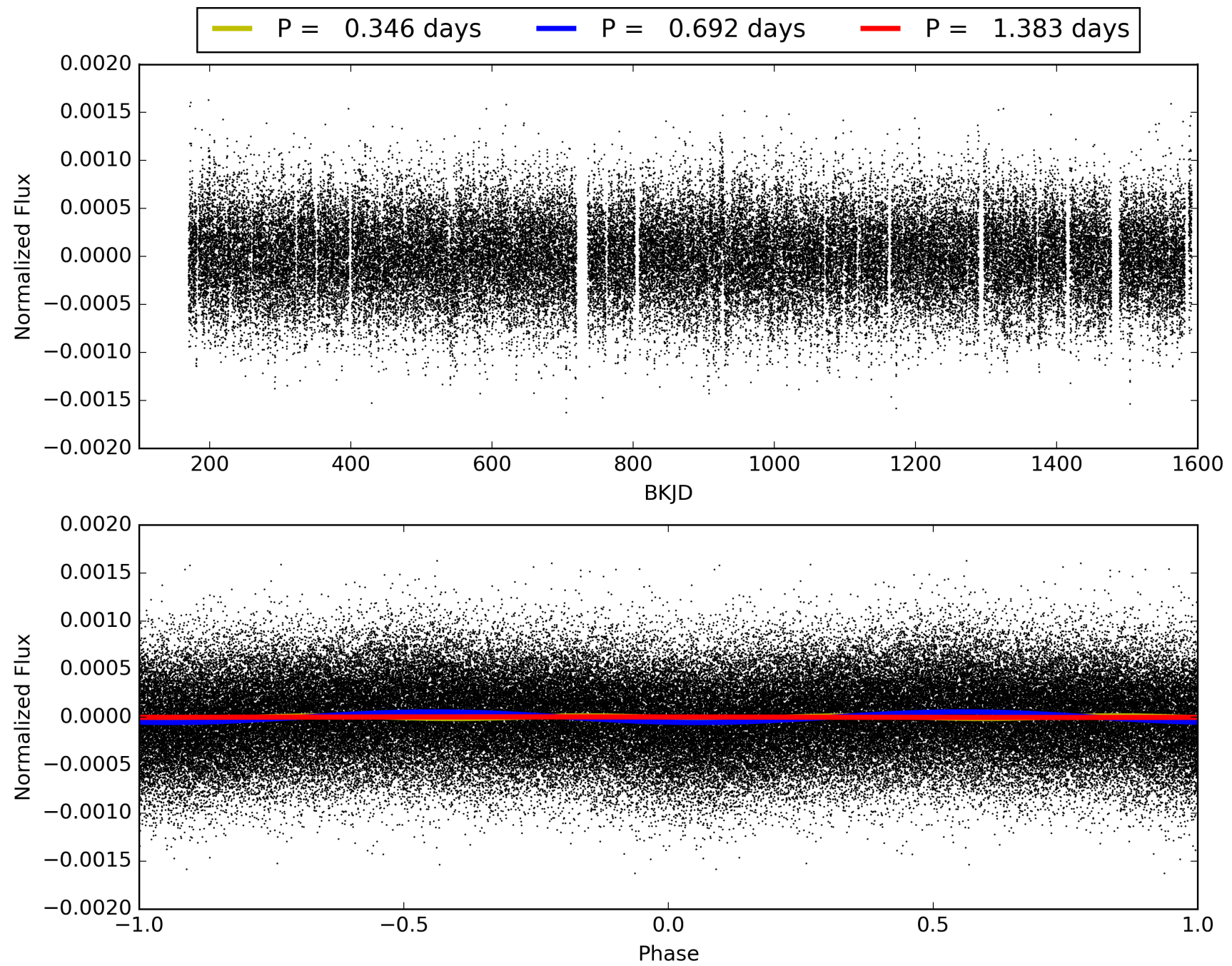
KIC: 5905234 Candidate: 1 of 2 Period: 0.692 d



TCE 005905234-01, PDC Light Curves

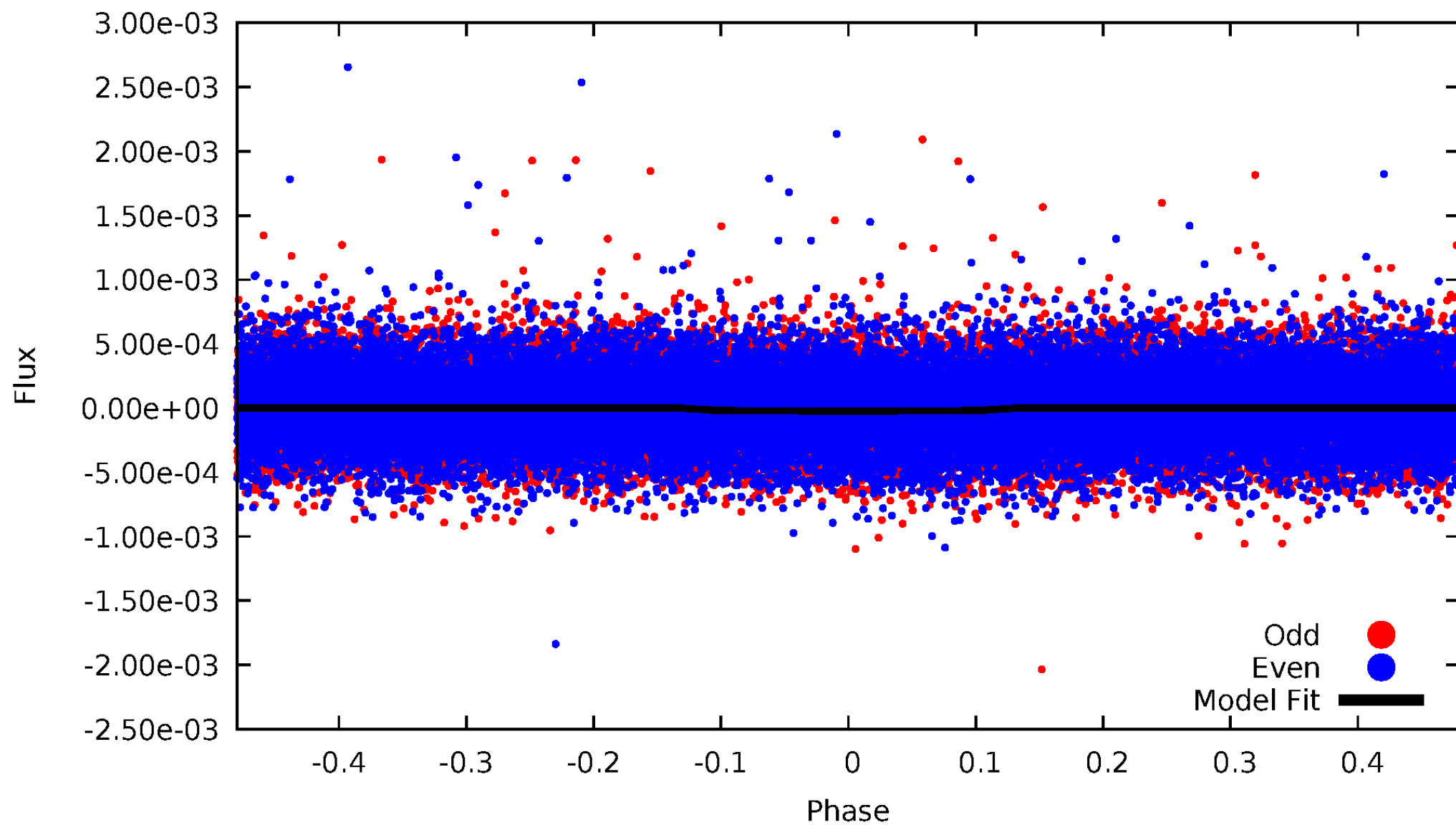


TCE 005905234-01



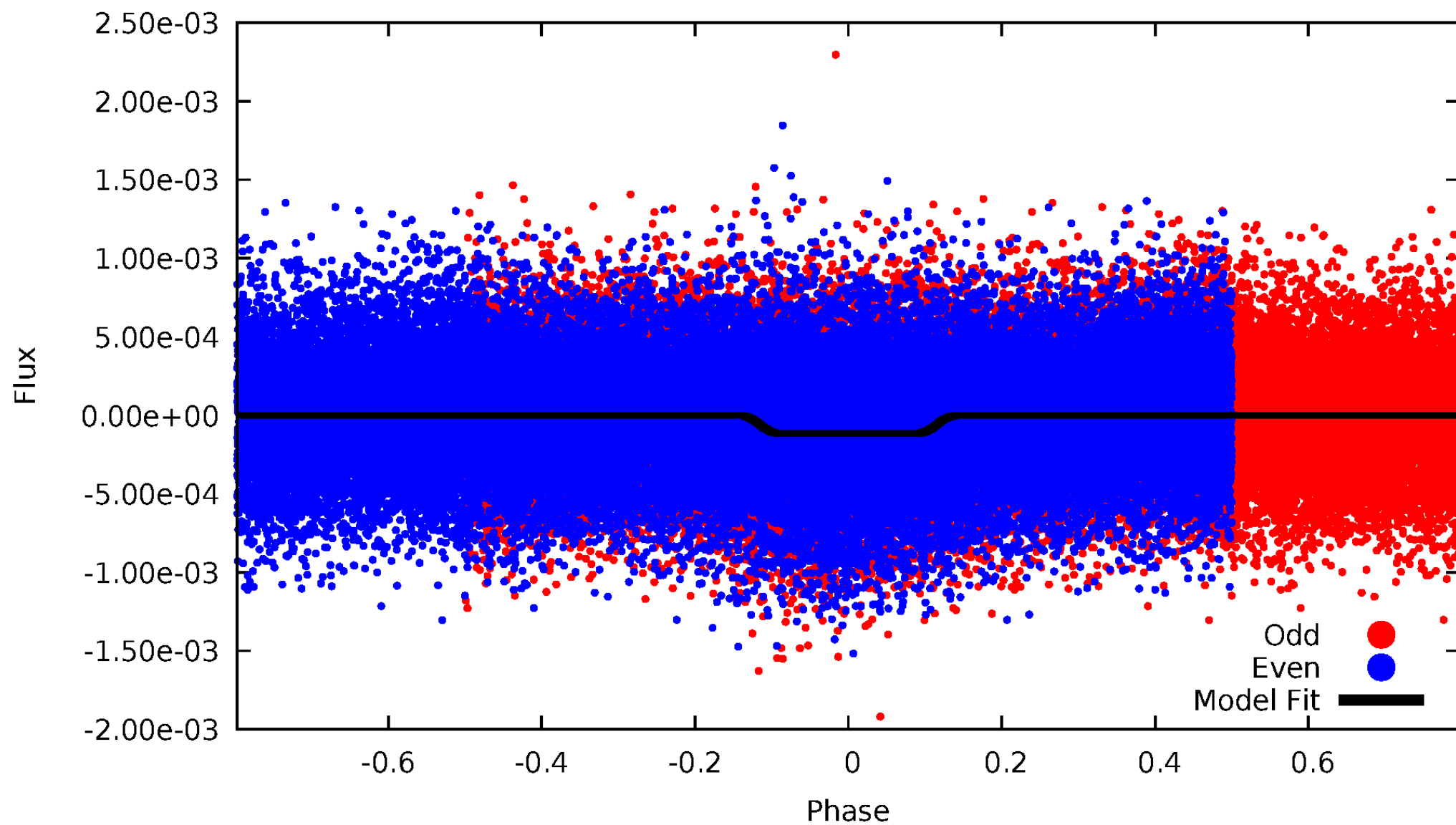
DV Odd/Even

TCE 005905234-01



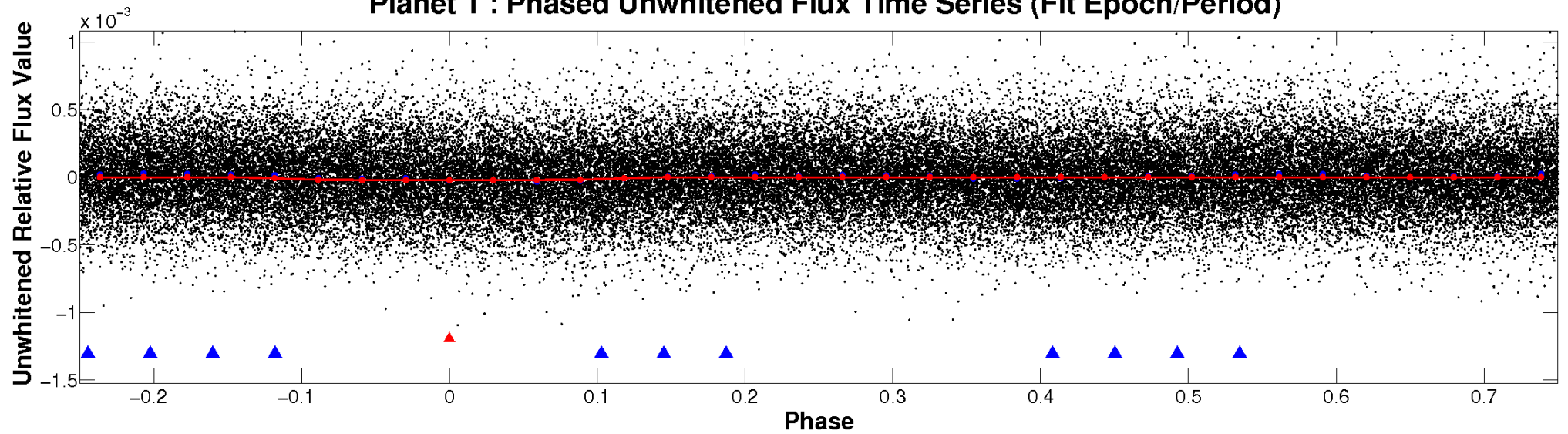
ALT Odd/Even

TCE 005905234-01

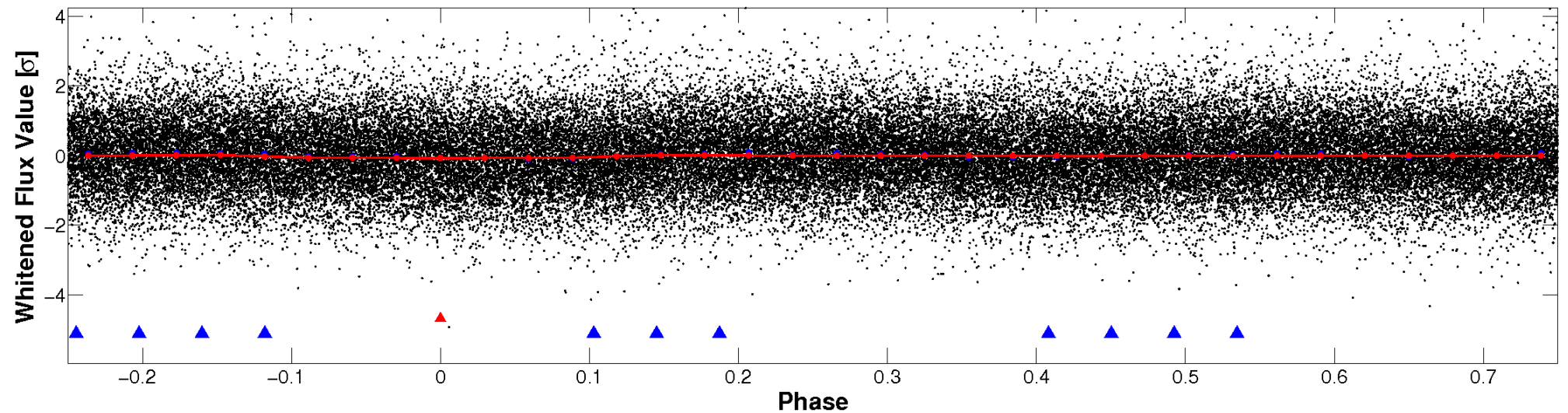


Non-Whitened Vs. Whitened Light Curve

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

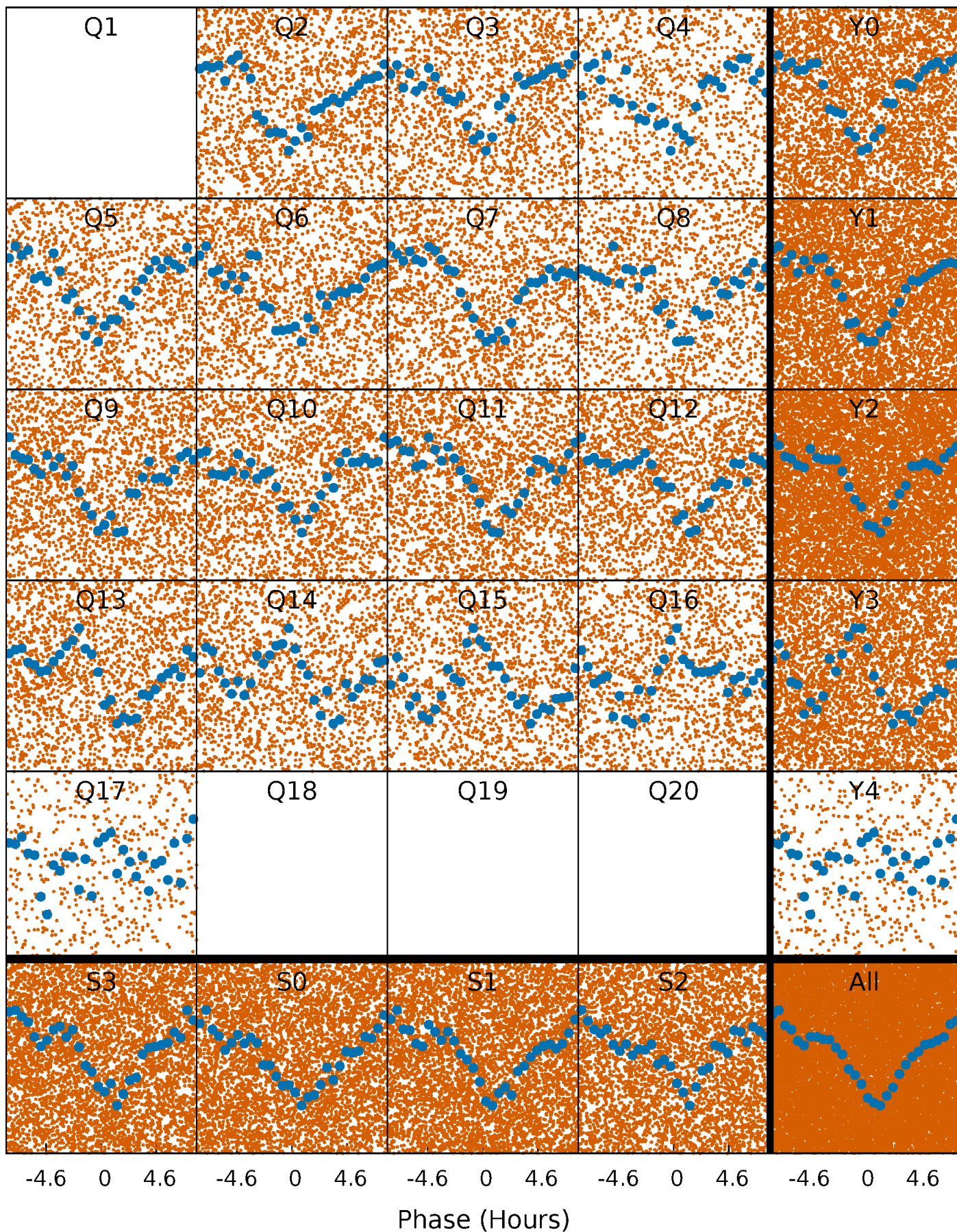


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



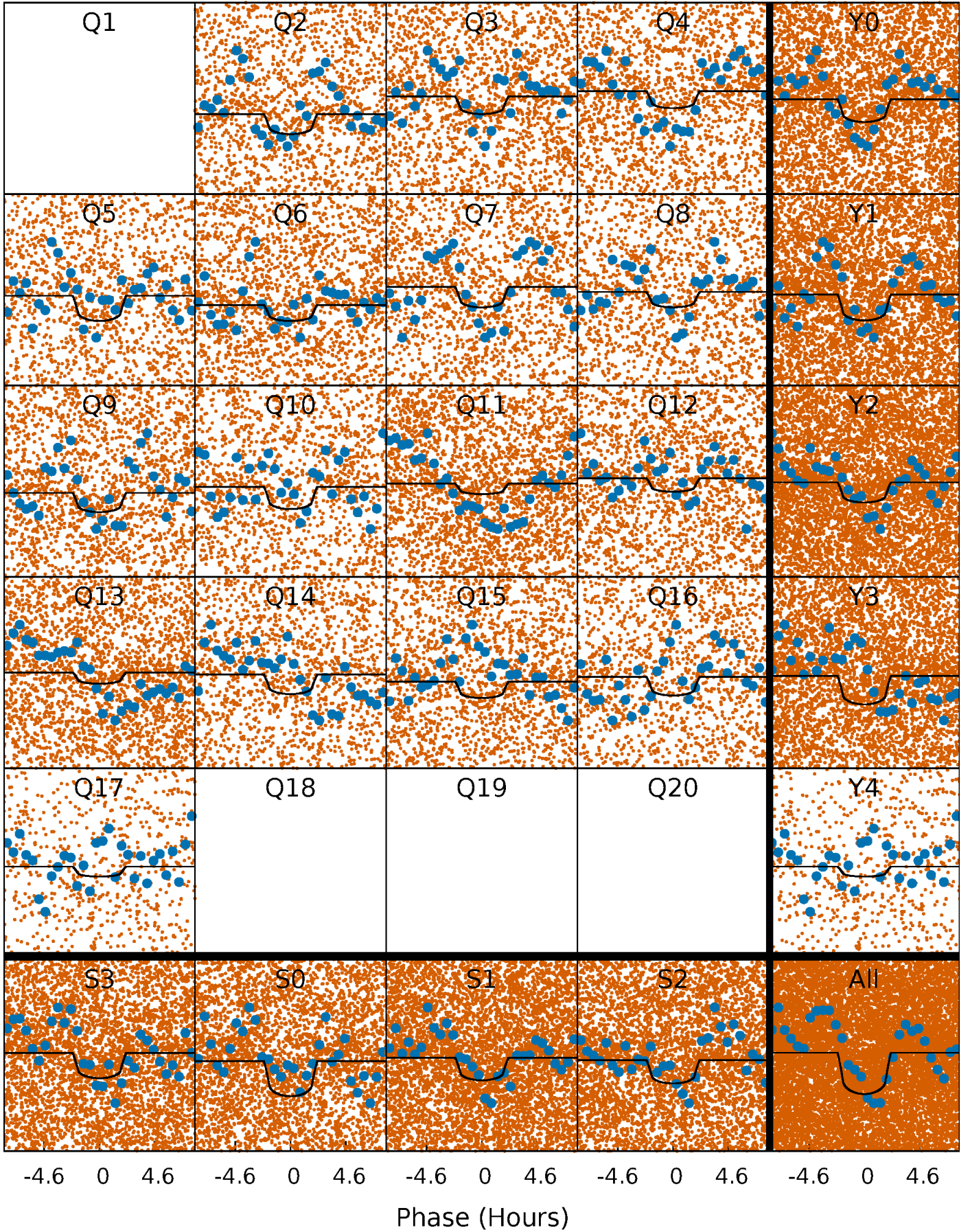
PDC Quarter-Phased Transit Curves

TCE 005905234-01 P= 0.691621 Days $T_0=132.096029$ (BKJD)



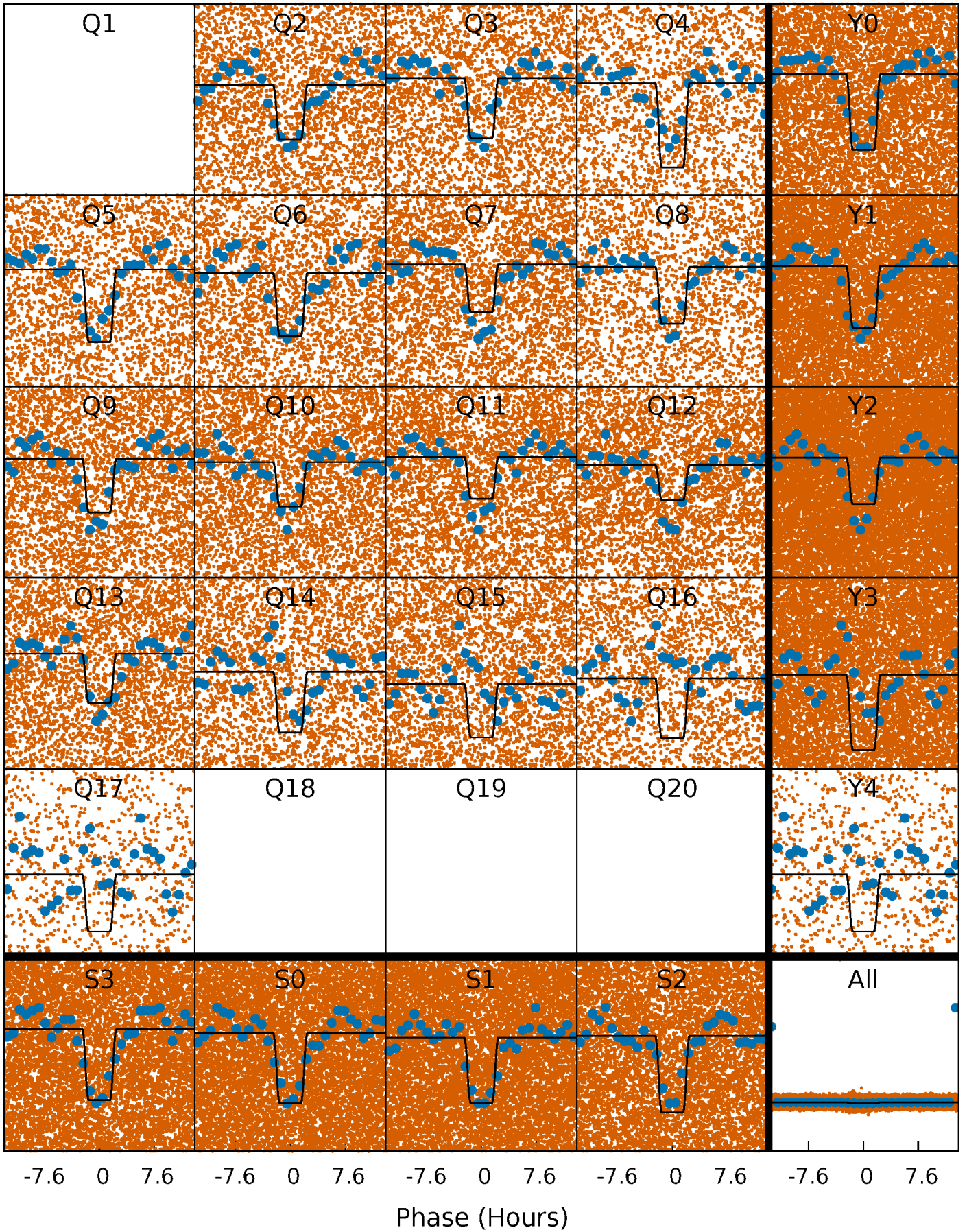
DV Quarter-Phased Transit Curves

TCE 005905234-01 P= 0.691621 Days $T_0=132.096029$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

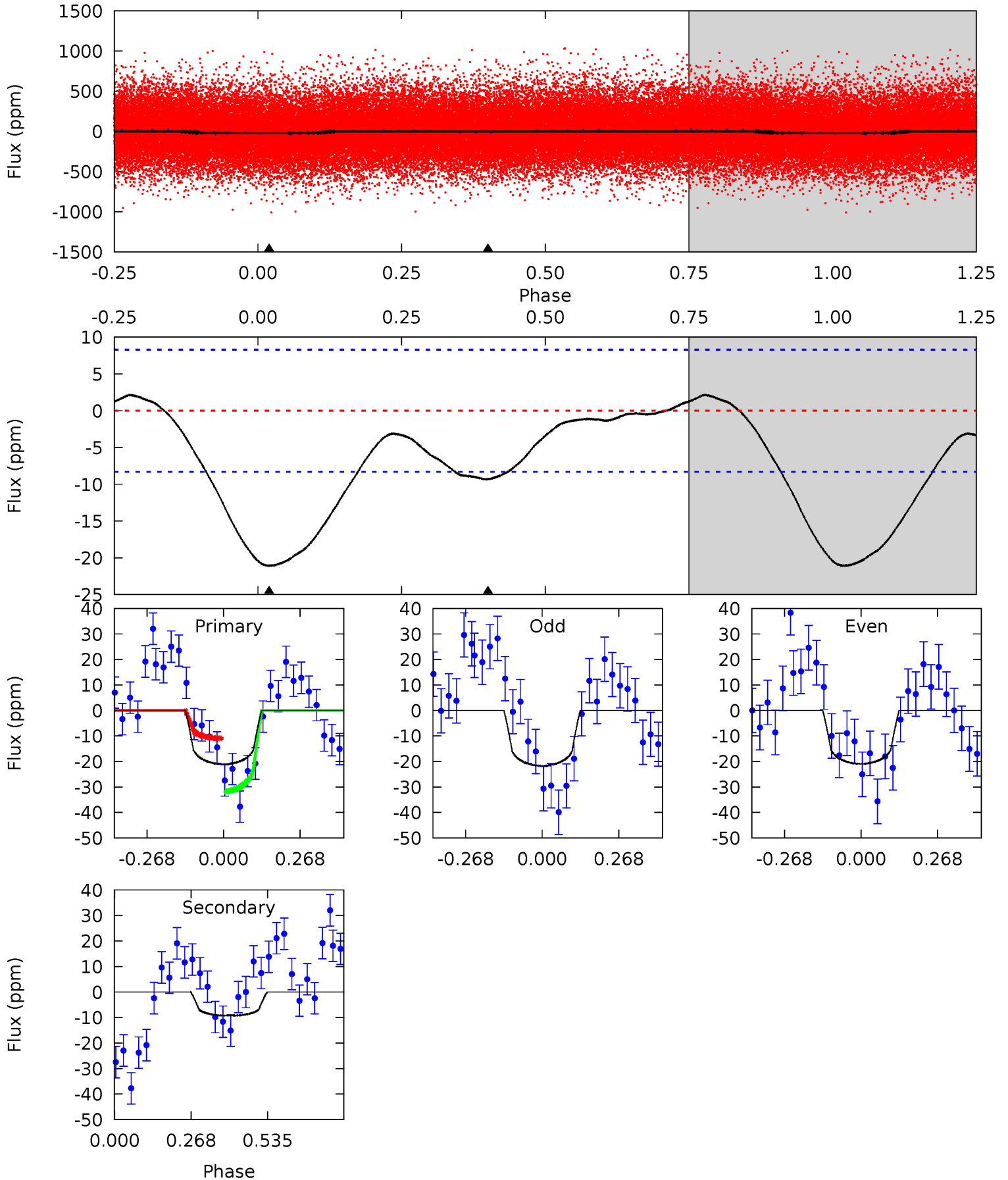
TCE 005905234-01 P= 0.691671 Days $T_0=132.091456$ (BKJD)



DV Model-Shift Uniqueness Test

005905234-01, P = 0.691621 Days, E = 132.096029 Days

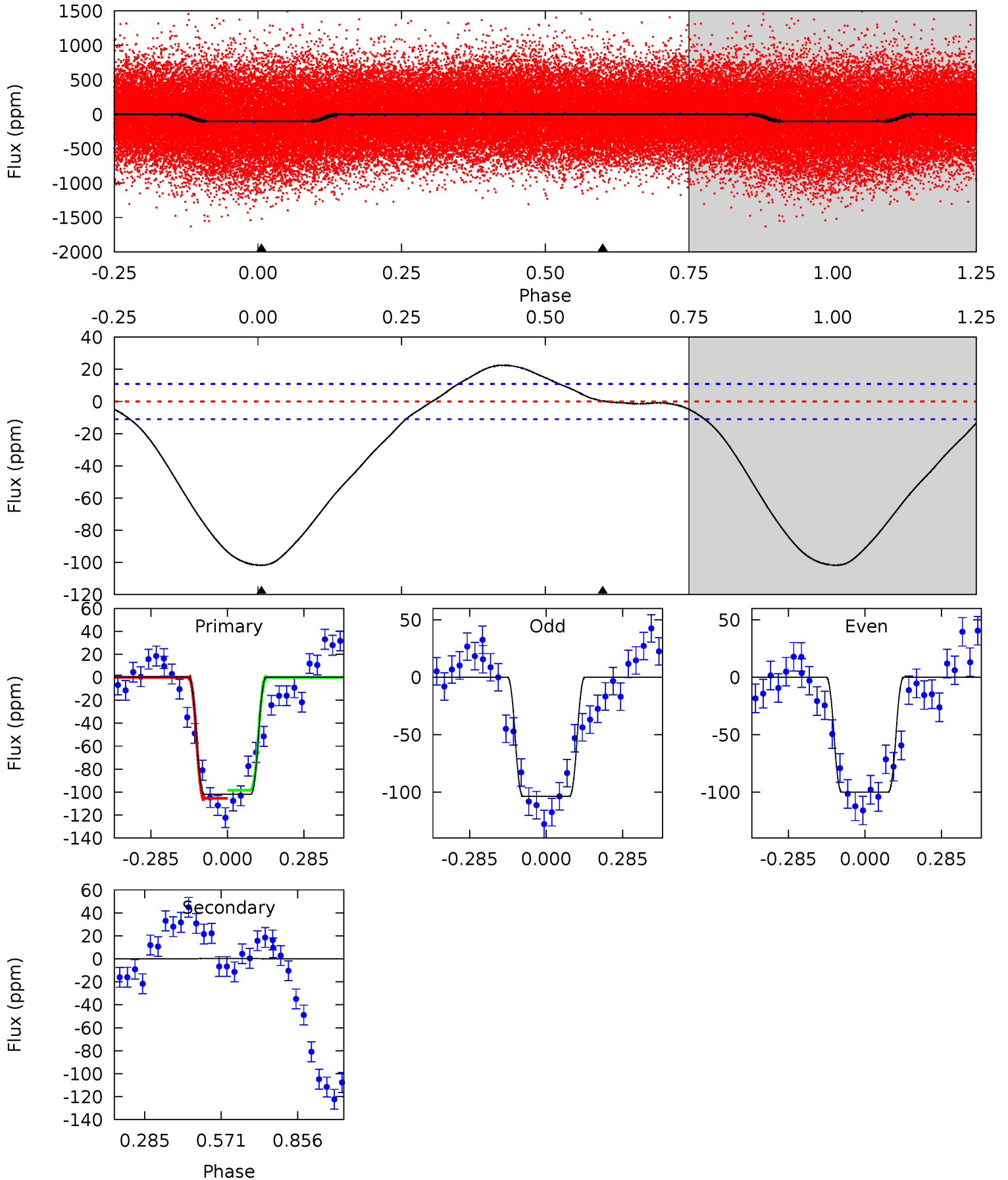
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.1	4.89	0	0	4.35	1.11	0.35	11.1	11.1	4.89	4.89	0.20	1.09	0.09	5.40



Alt Model-Shift Uniqueness Test

005905234-01, P = 0.691671 Days, E = 132.091456 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
40.2	-0.14	0	0	4.34	1.07	2.71	40.2	40.2	-0.14	-0.14	0.73	1.04	0.18	1.20



Stellar Parameters For KIC 005905234

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6971^{+194}_{-305}	$4.232^{+0.108}_{-0.201}$	$-0.060^{+0.250}_{-0.350}$	$1.493^{+0.508}_{-0.274}$	$1.394^{+0.216}_{-0.216}$	$0.590^{+0.306}_{-0.321}$
	+3%/-4%	+3%/-5%	+417%/-583%	+34%/-18%	+15%/-15%	+52%/-54%
Source	PHO54	PHO54	PHO54	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 005905234-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-9 ± 2	$0.97^{+0.78}_{-0.60}$	4055^{+305}_{-273}	4817^{+3042}_{-1469}	$1.554^{+8.025}_{-1.108}$
Alt.	0 ± 3	$1.85^{+0.84}_{-0.85}$	4064^{+322}_{-270}	-3768^{+394}_{-356}	$-0.014^{+0.128}_{-0.177}$

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

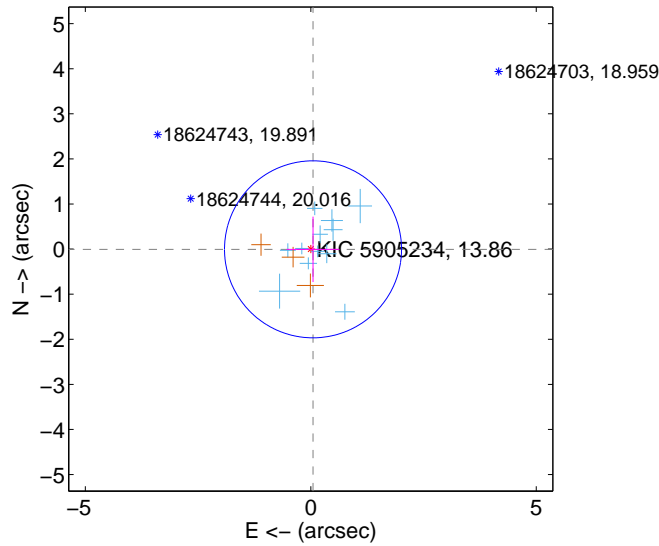
Supplemental centroid analysis for 005905234-01. Kepler magnitude: 13.86. Transit SNR 7.71

There are 12 quarters with good PRF difference image offsets

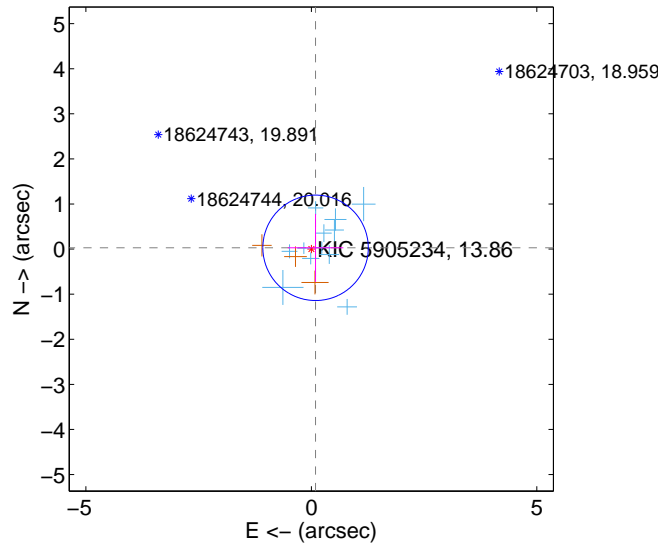
The direct PRF centroid is offset from the target star catalog position by about 0.13 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.049 ± 0.654	0.08	-0.049 ± 0.587	-0.005 ± 0.724
PRF-fit source offset from KIC position	0.098 ± 0.390	0.25	-0.094 ± 0.616	0.028 ± 0.752
photometric centroid source offset	0.75 ± 1.24	0.60	-0.11 ± 1.29	0.74 ± 1.24

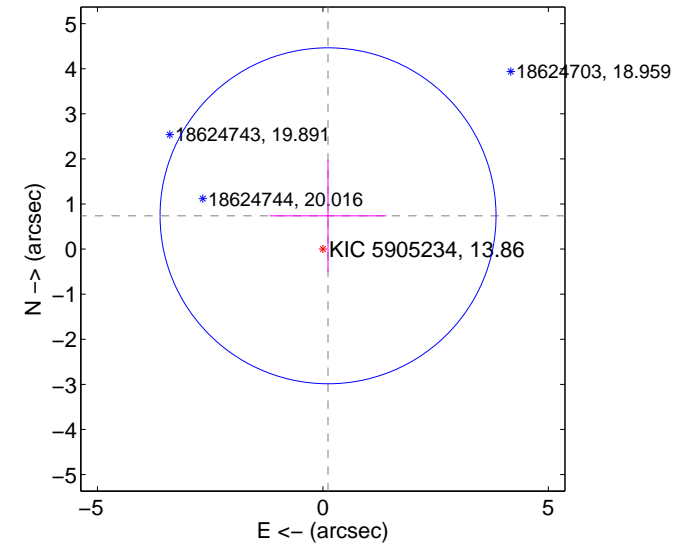
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

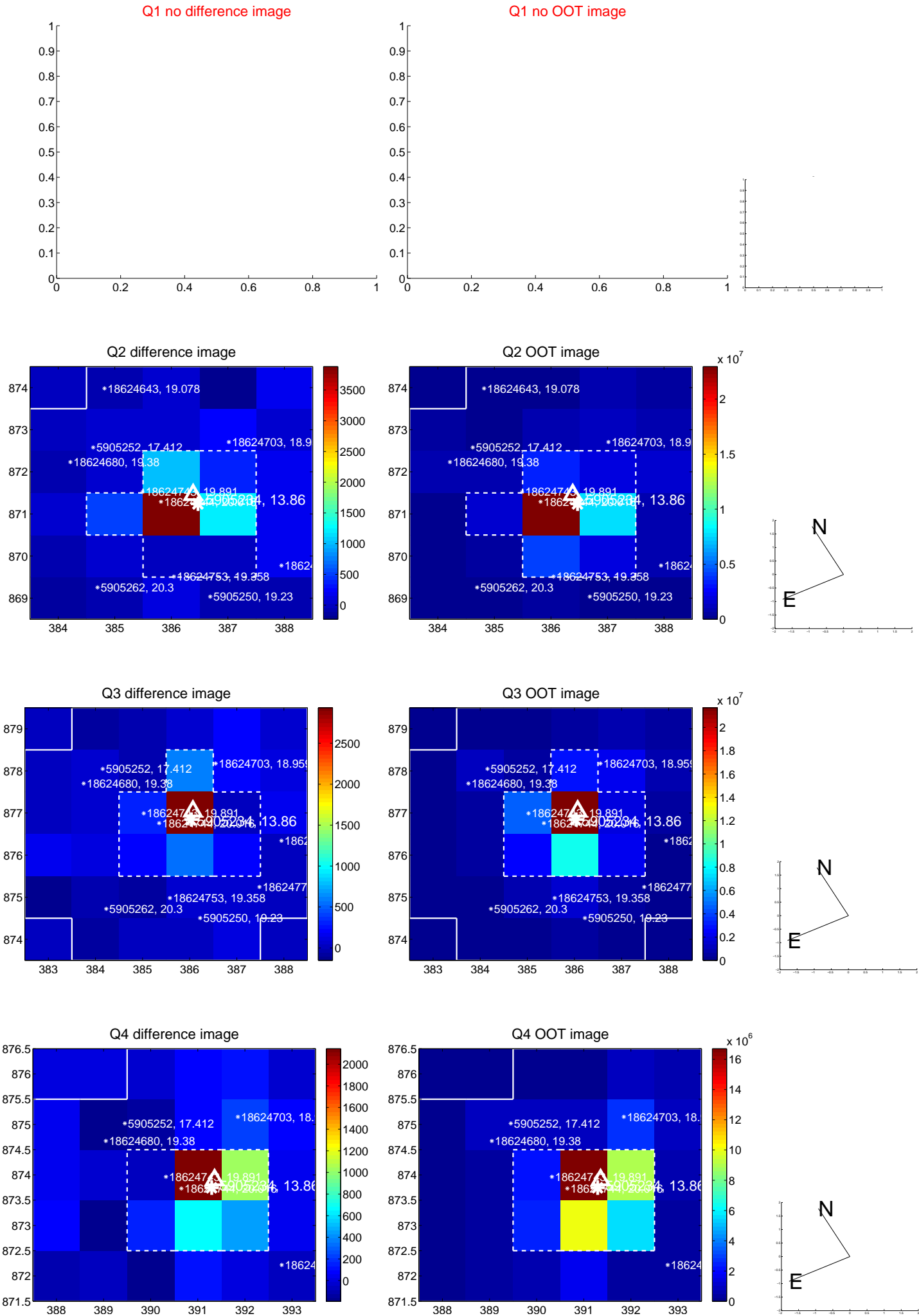


offset from photometric centroids

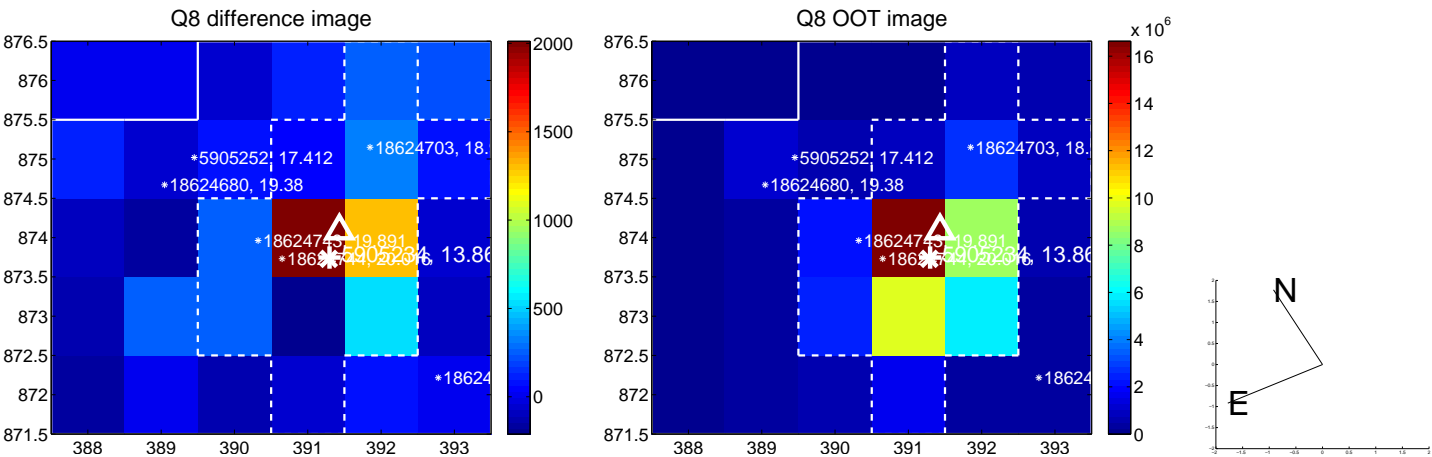
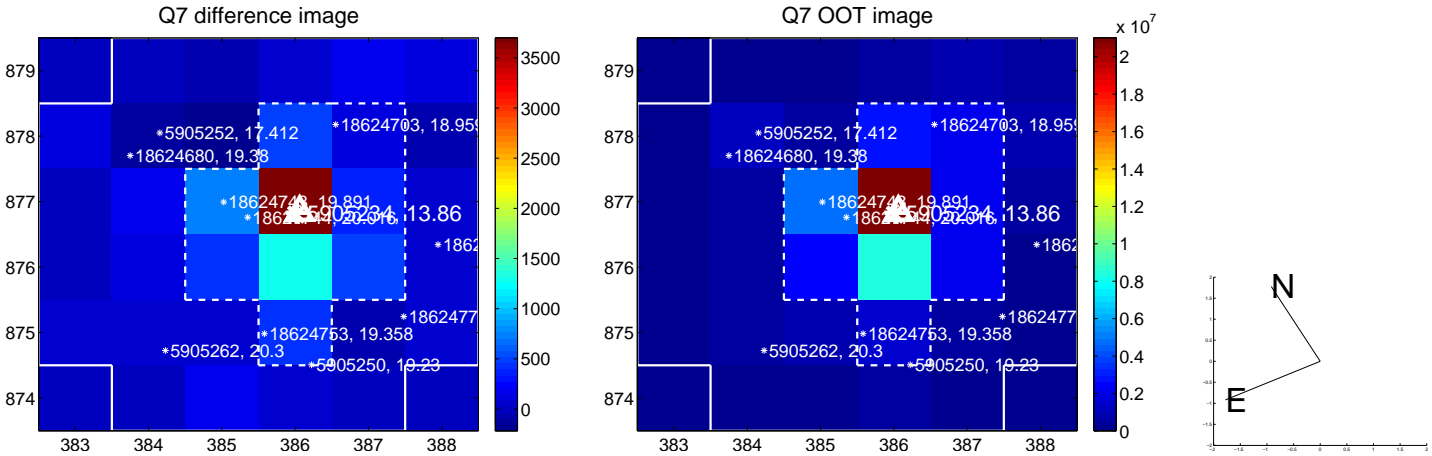
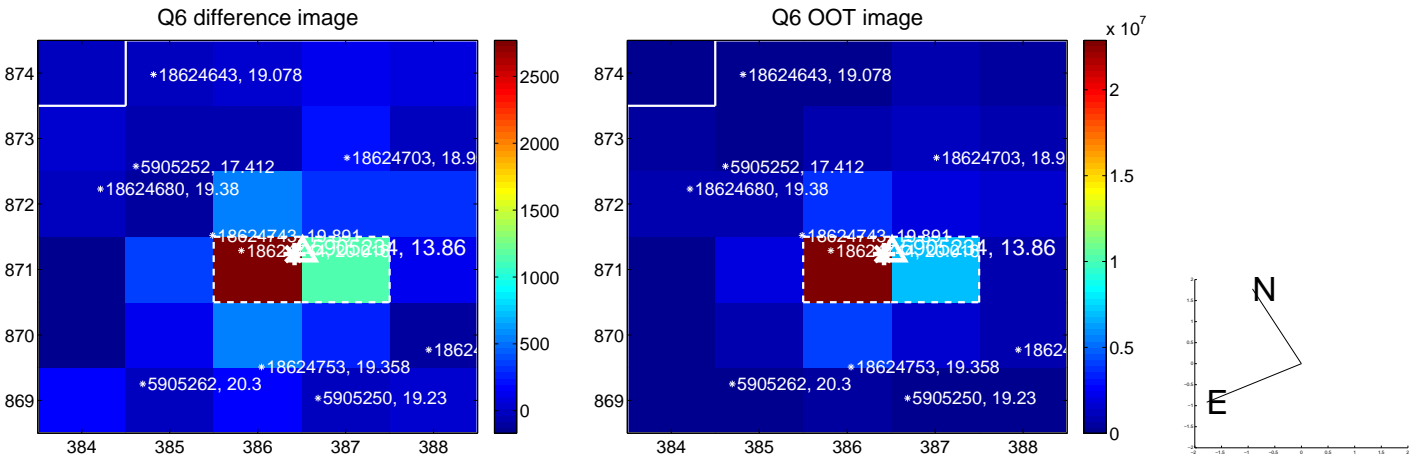
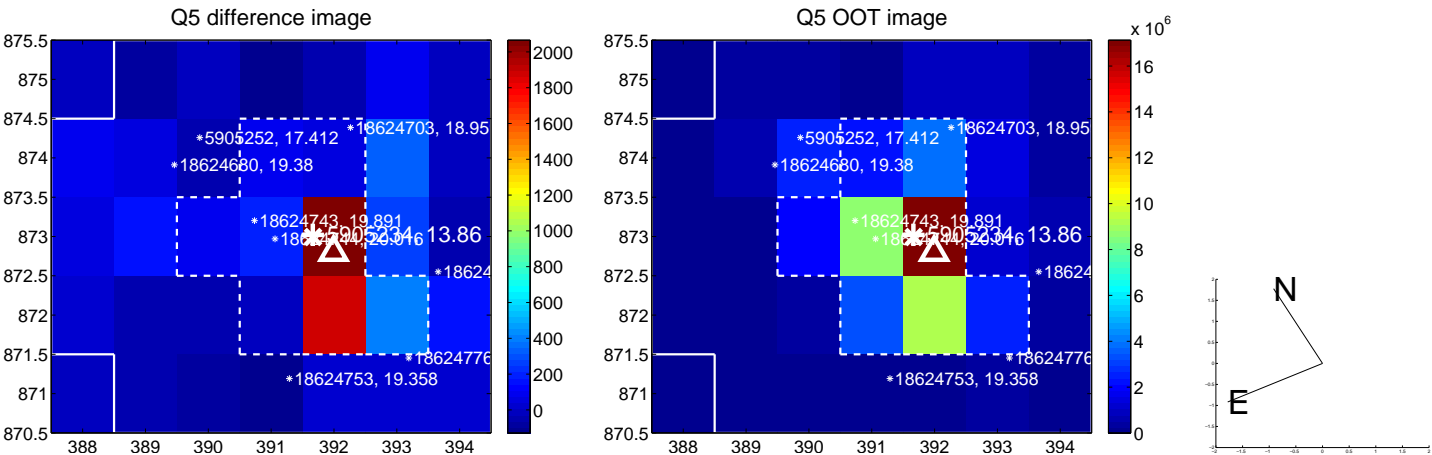


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

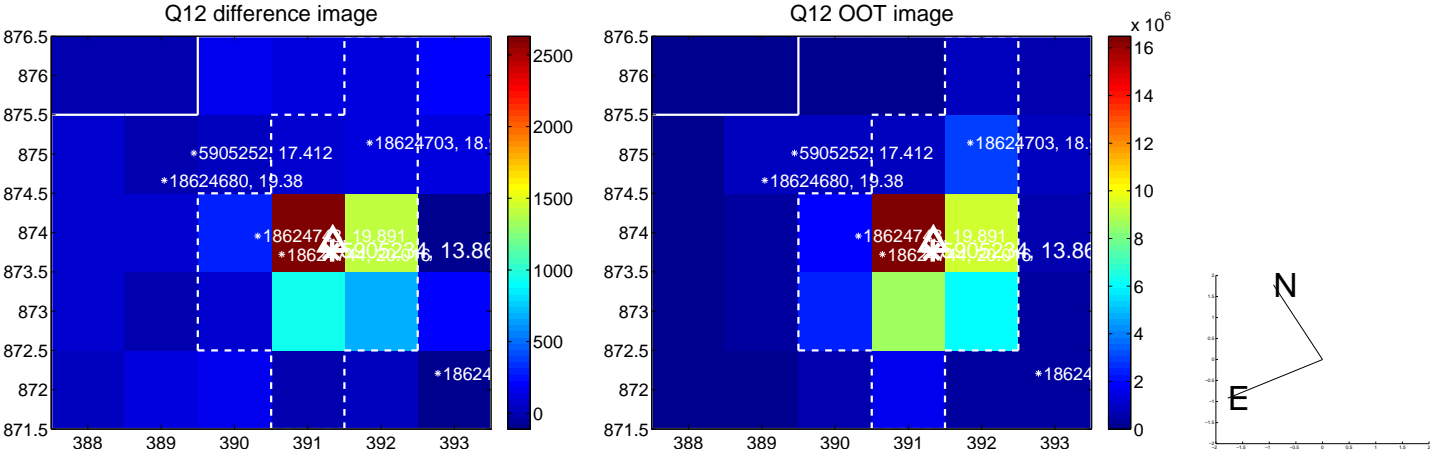
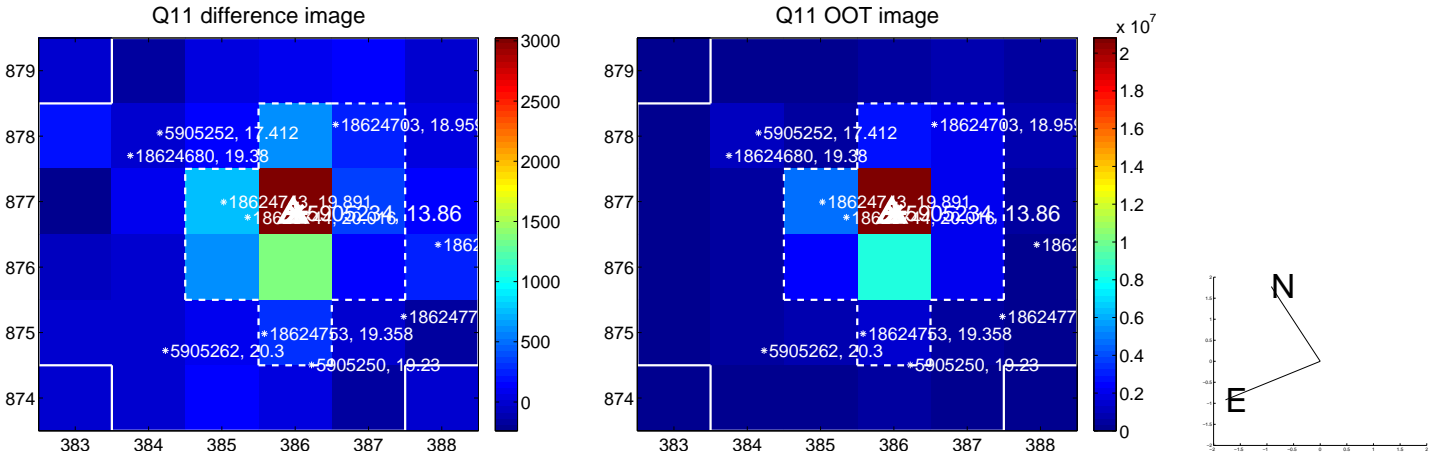
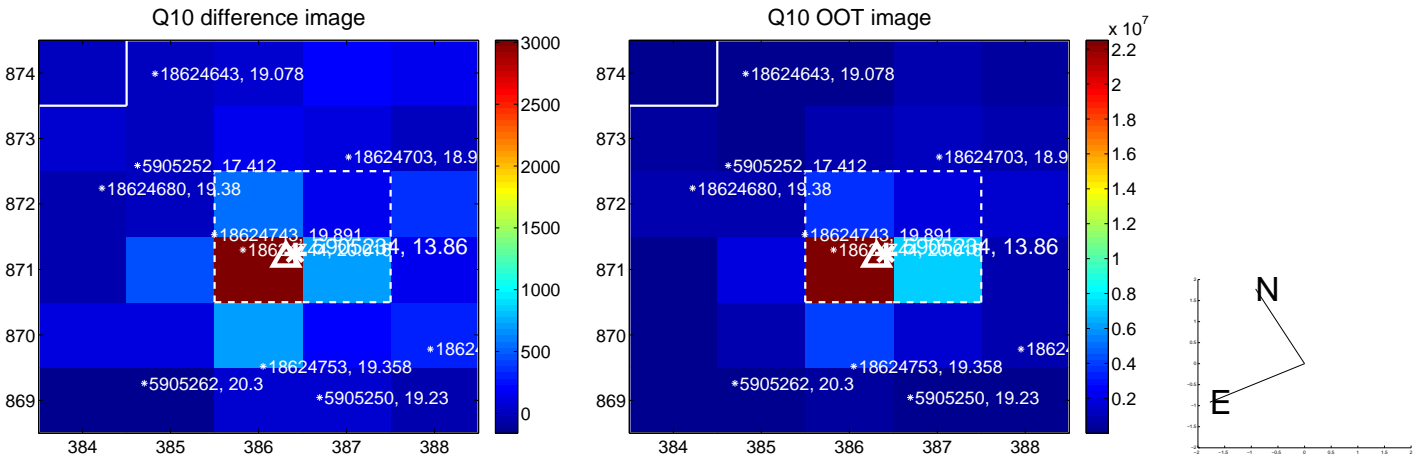
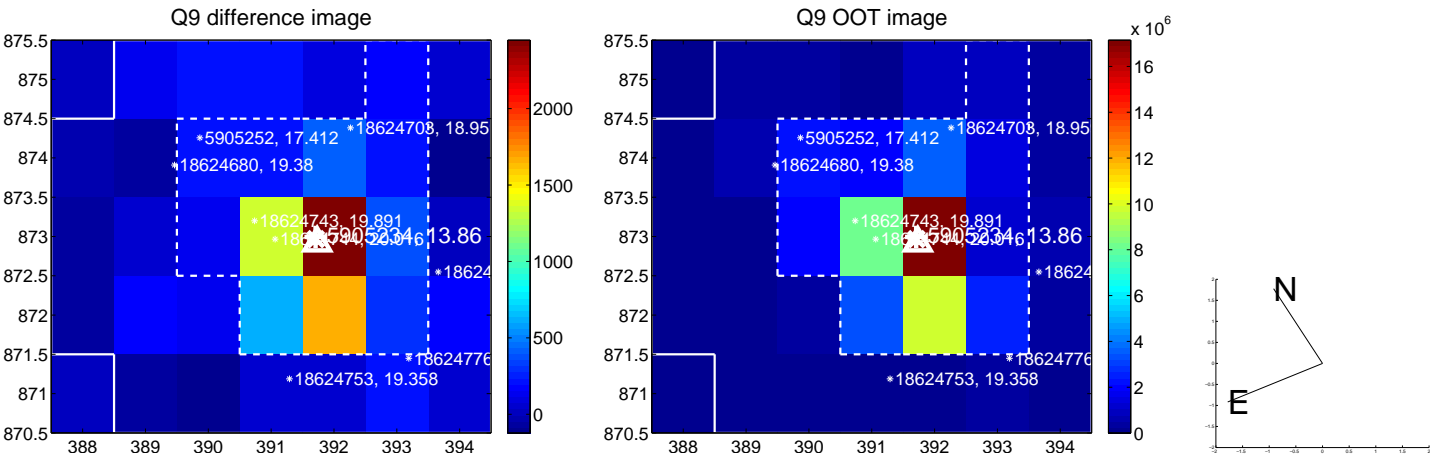
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



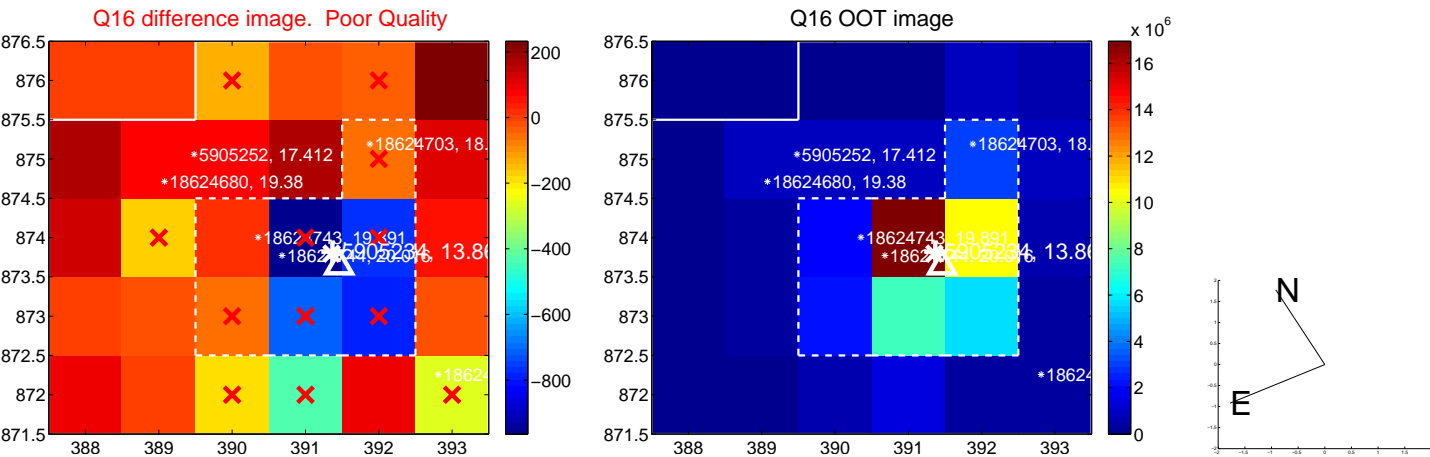
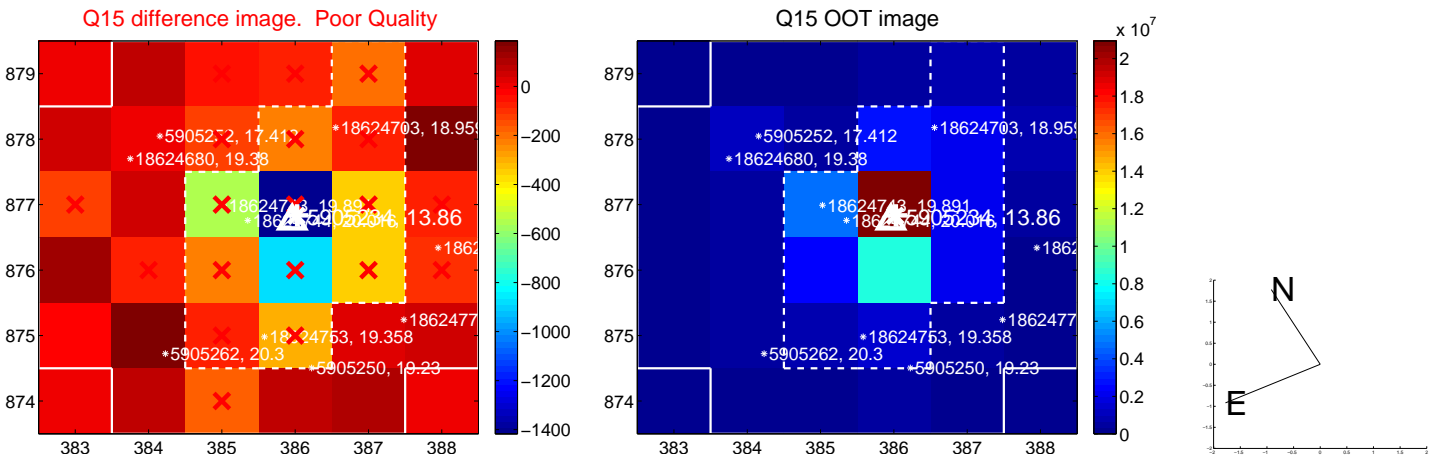
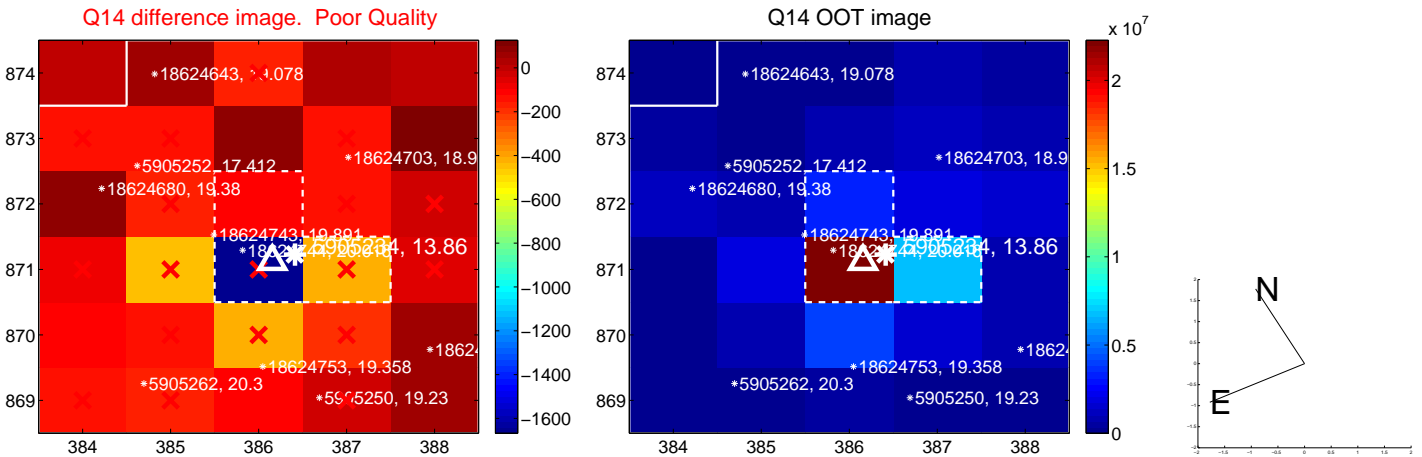
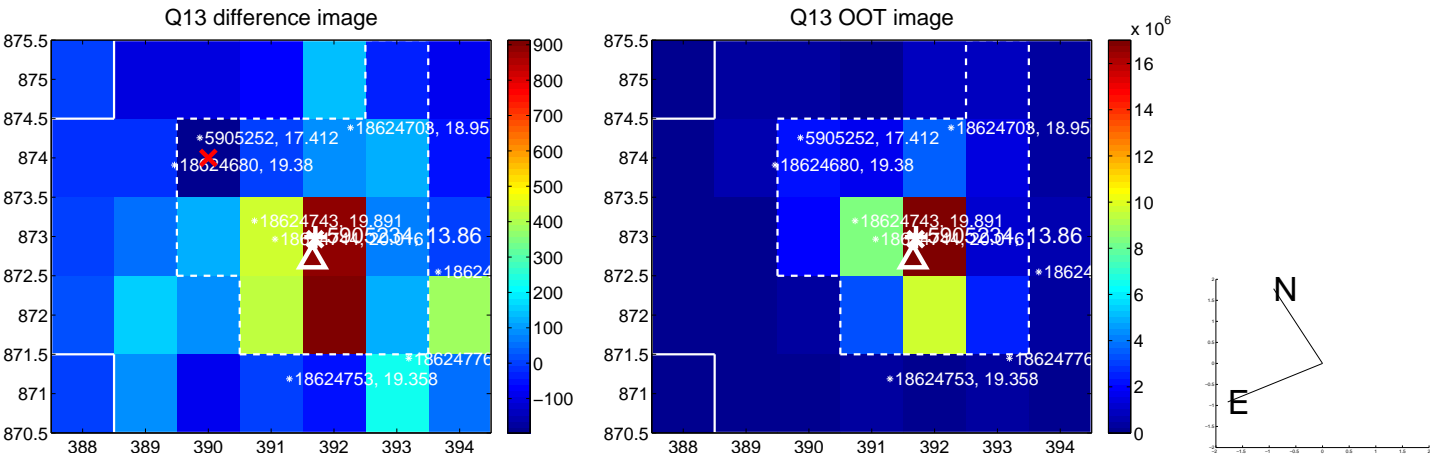
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



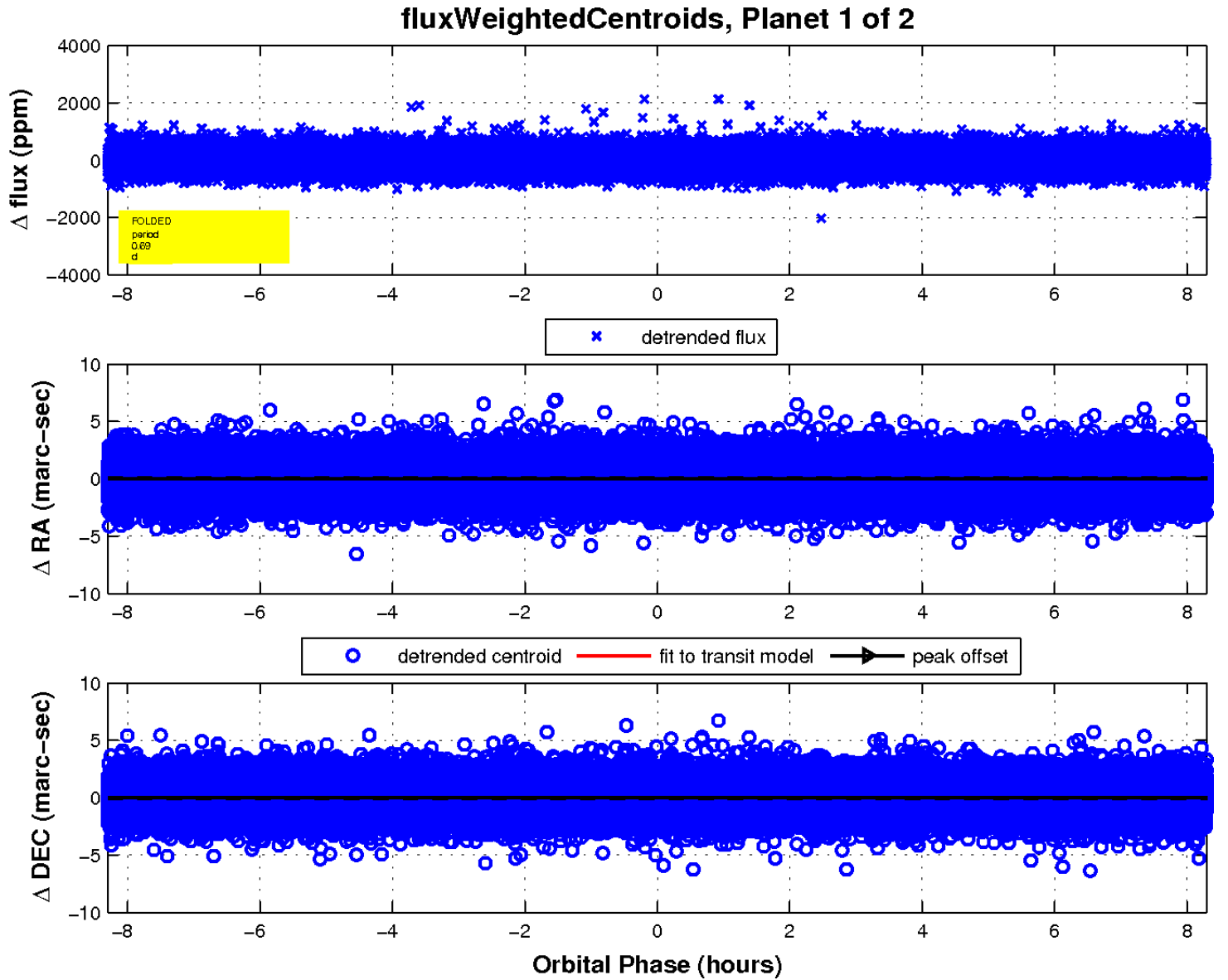
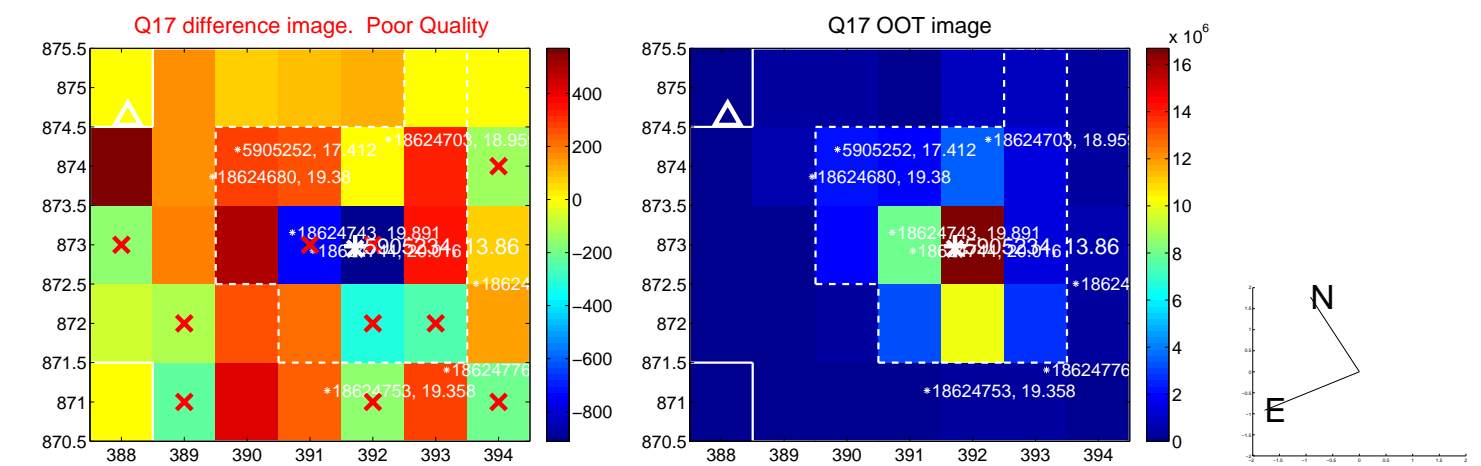
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



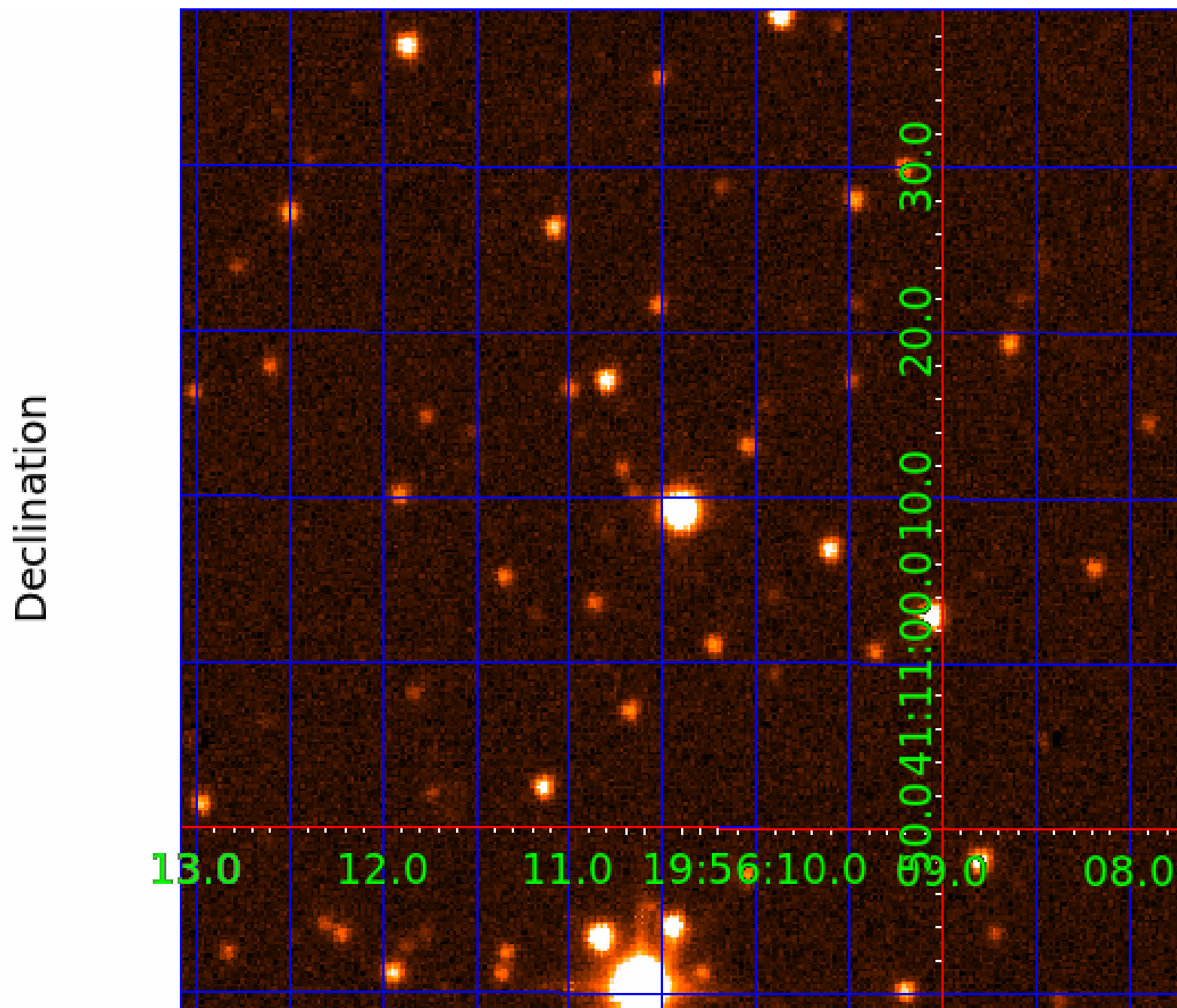
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 005905234

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})
005905234-01	OBS	No	0.691621	132.096029	23.2	3.982	10.2	7.7	1.49	6971	0.73	16179.21
005905234-02	OBS	No	132.550913	244.057038	434.6	2.309	8.1	7.6	1.49	6971	3.36	14.64

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005905234-01	OBS	FP	0.00	1	0	0	0	LPP_DV
005905234-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_SKYE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_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.

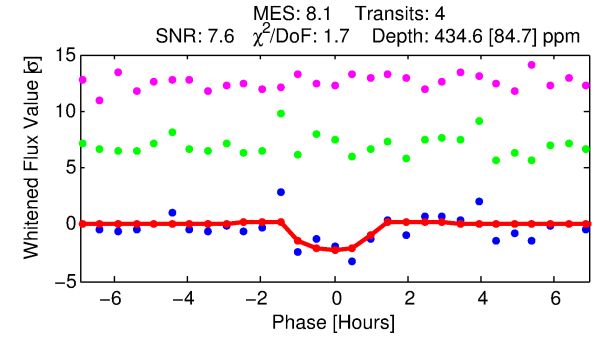
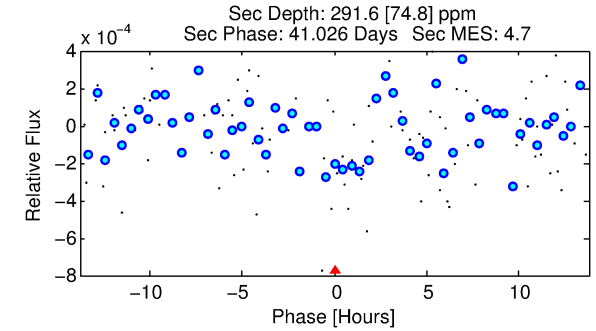
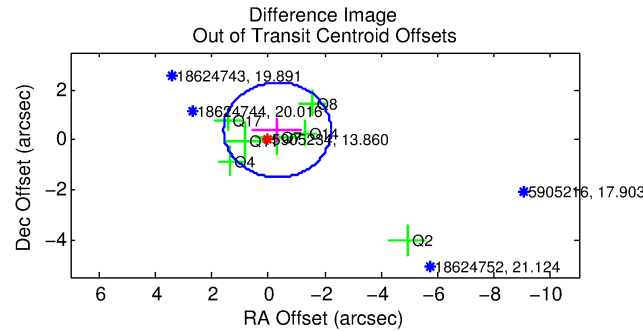
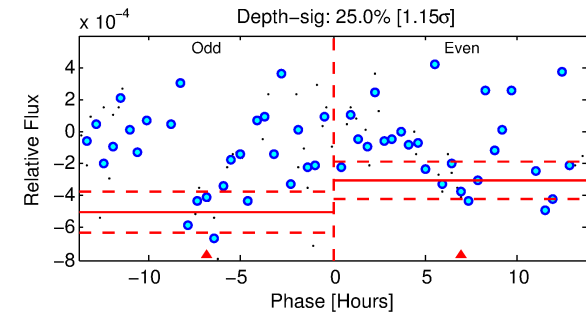
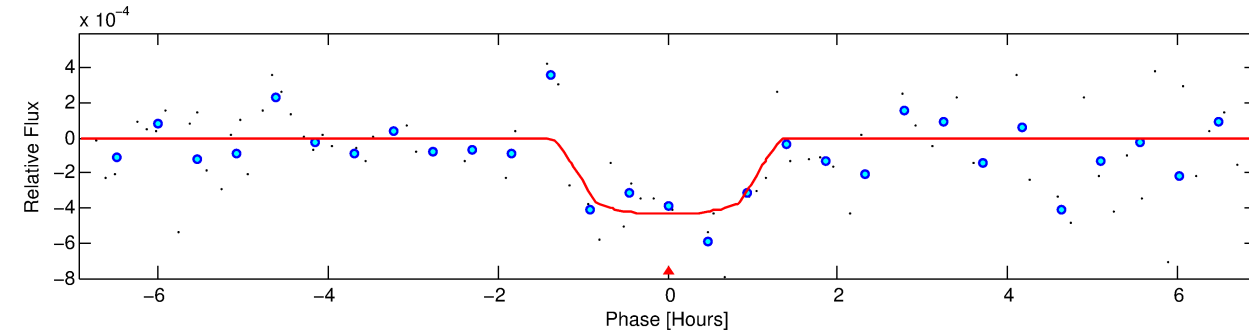
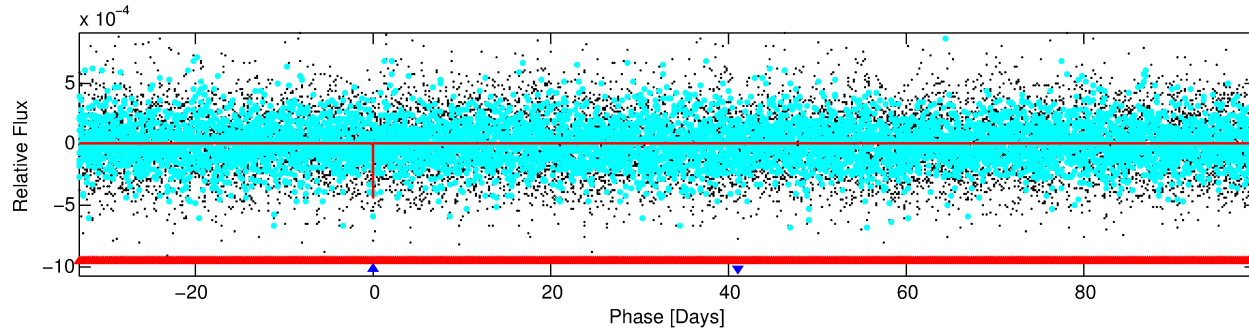
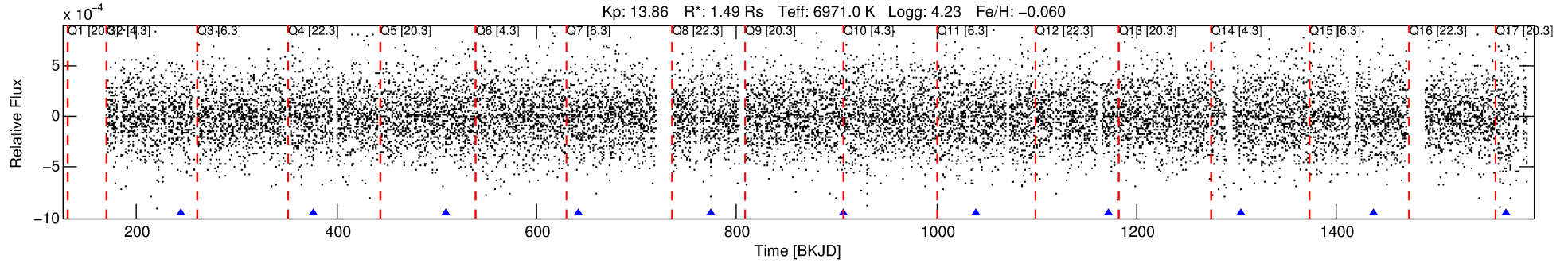
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005905234-02

No Significant Match Found

DV One-Page Summary

KIC: 5905234 Candidate: 2 of 2 Period: 132.551 d



DV Fit Results:

Period = 132.55091 [0.00163] d
Epoch = 244.0570 [0.0084] BKJD
Rp/R* = 0.0206 [0.0488]
a/R* = 314.95 [4429.62]
b = 0.73 [9.23]
Seff = 14.64 [6.17]
Teq = 499 [53] K
Rp = 3.36 [8.03] Re
a = 0.5675 [0.1557] AU
Ag = 4581.91 [21783.80] [0.21 σ]
Teffp = 6345 [7522] K [0.78 σ]

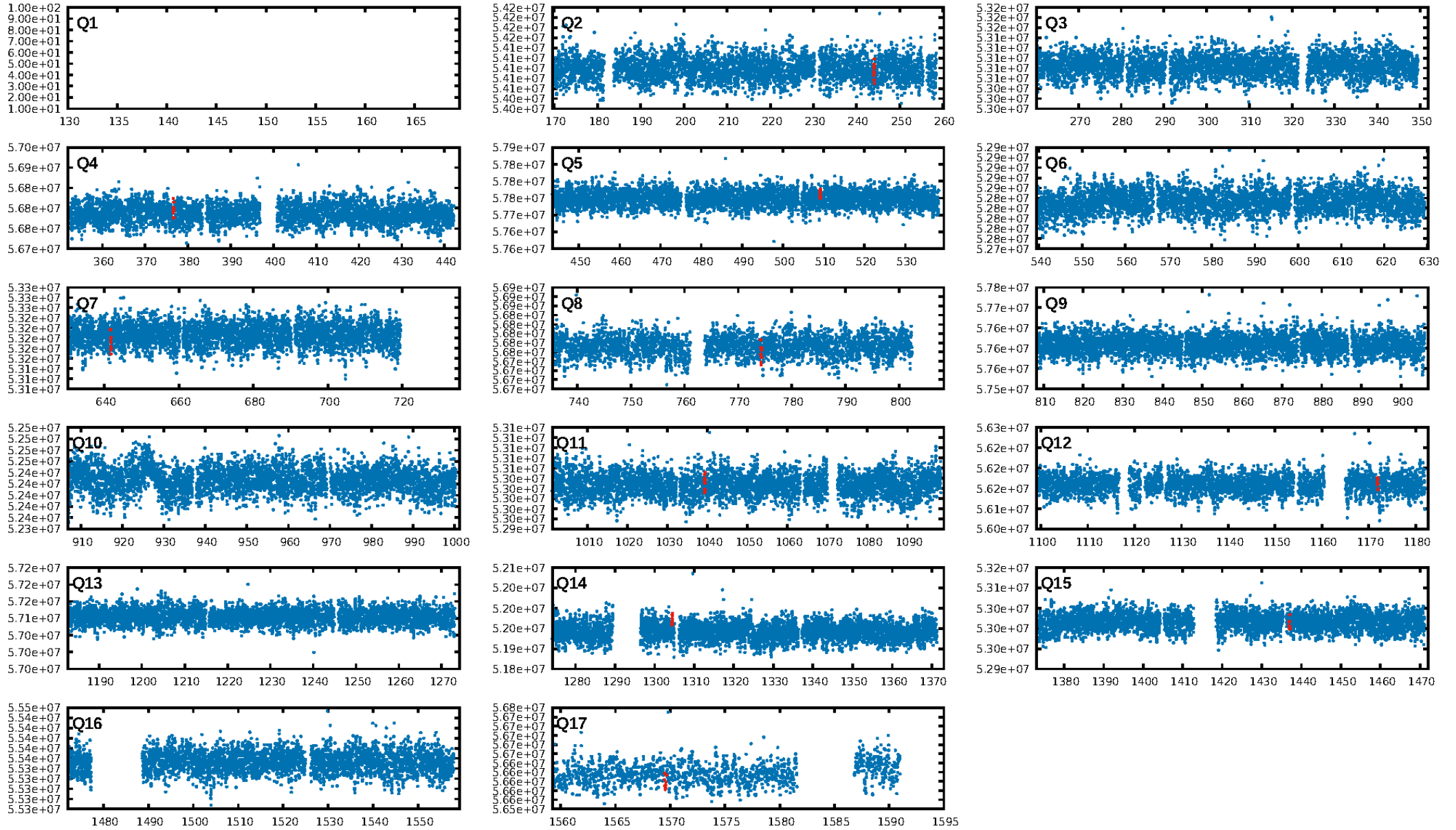
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [687.48 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 25.0%
ModelChiSquareGof-sig: 76.8%
Bootstrap-pfa: 1.70e-09
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -0.484
Centroid-sig: 21.1%
Centroid-so: 1.683 arcsec [1.26 σ]
OotOffset-rm: 0.507 arcsec [0.80 σ]
OotOffset-st: 2/2/2/1 [7]
KicOffset-rm: 0.402 arcsec [0.49 σ]
KicOffset-st: 2/2/2/1 [7]
DiffImageQuality-fgm: 0.43 [3/7]
DiffImageOverlap-fno: 0.00 [0/8]

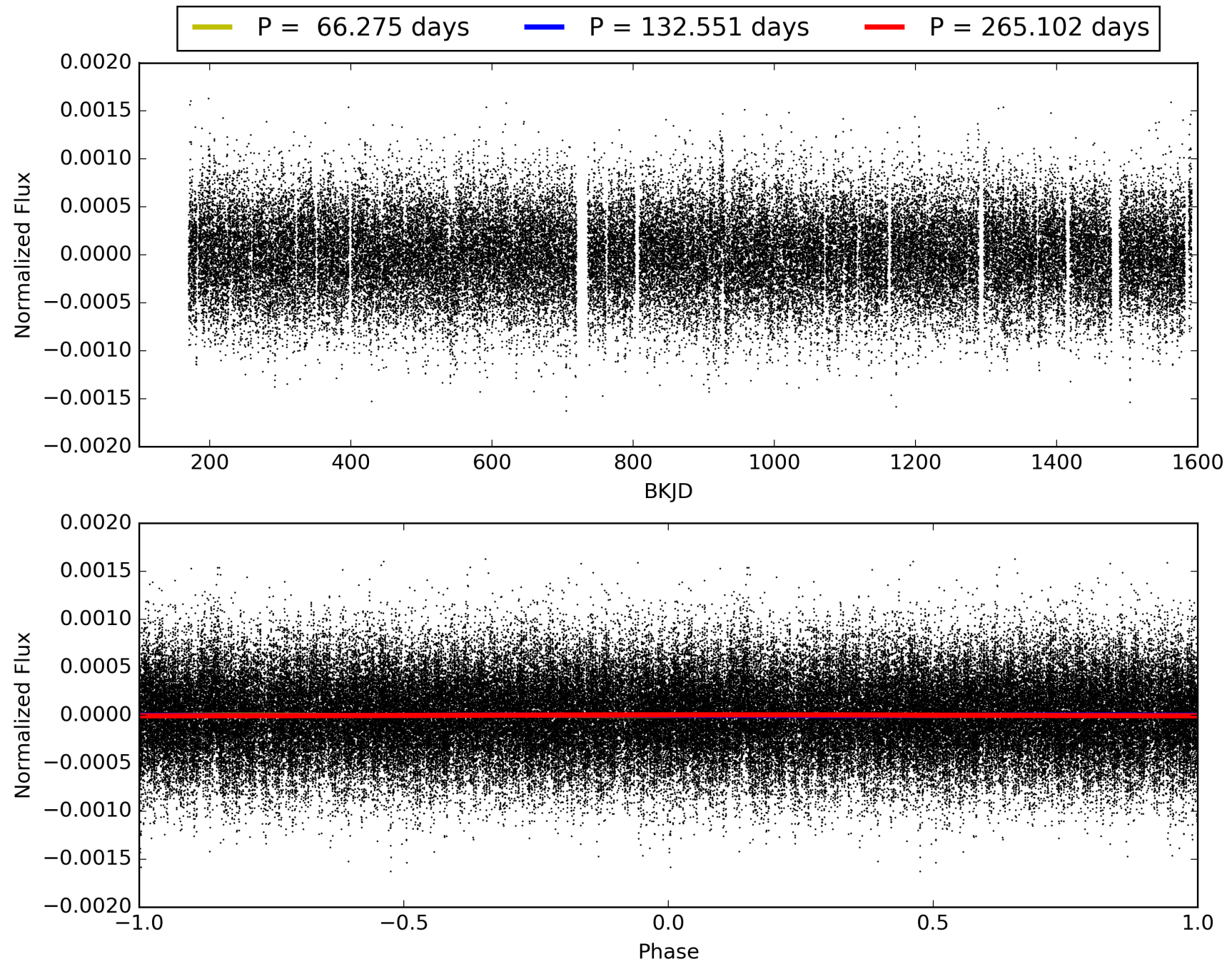
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 19:56:06 Z

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

TCE 005905234-02, PDC Light Curves

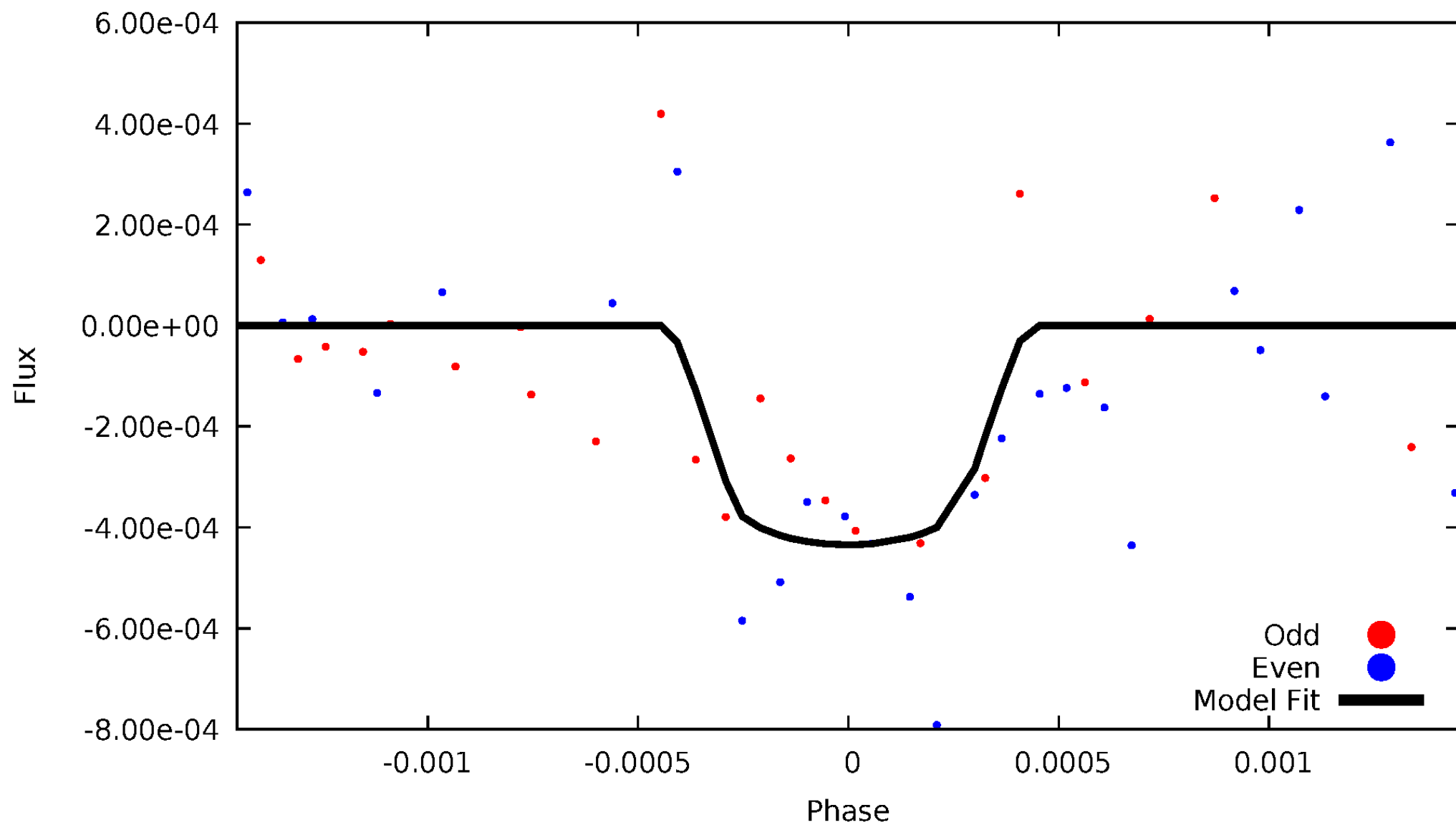


TCE 005905234-02



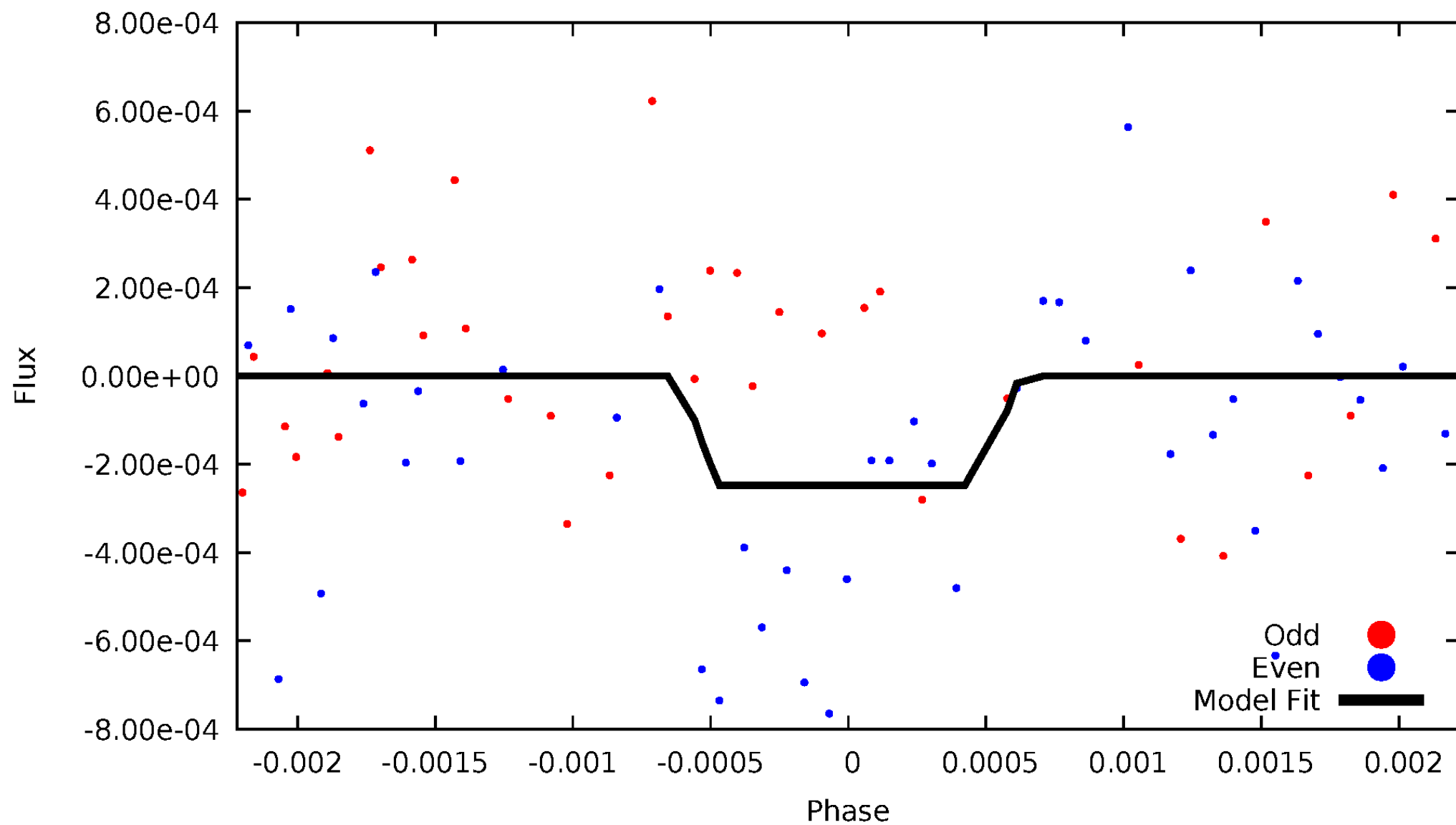
DV Odd/Even

TCE 005905234-02



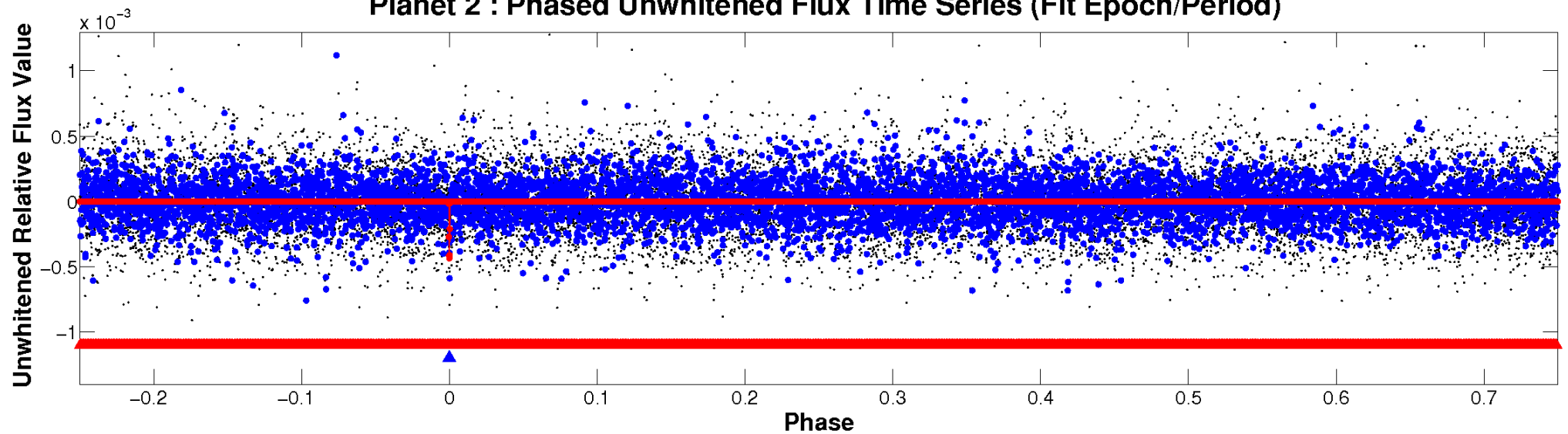
ALT Odd/Even

TCE 005905234-02

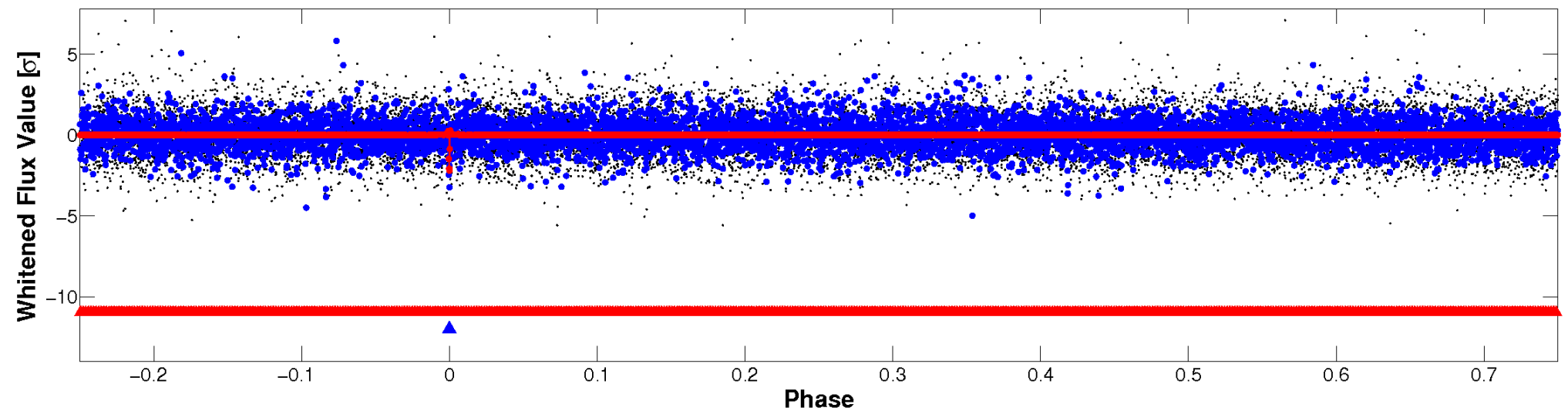


Non-Whitened Vs. Whitened Light Curve

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

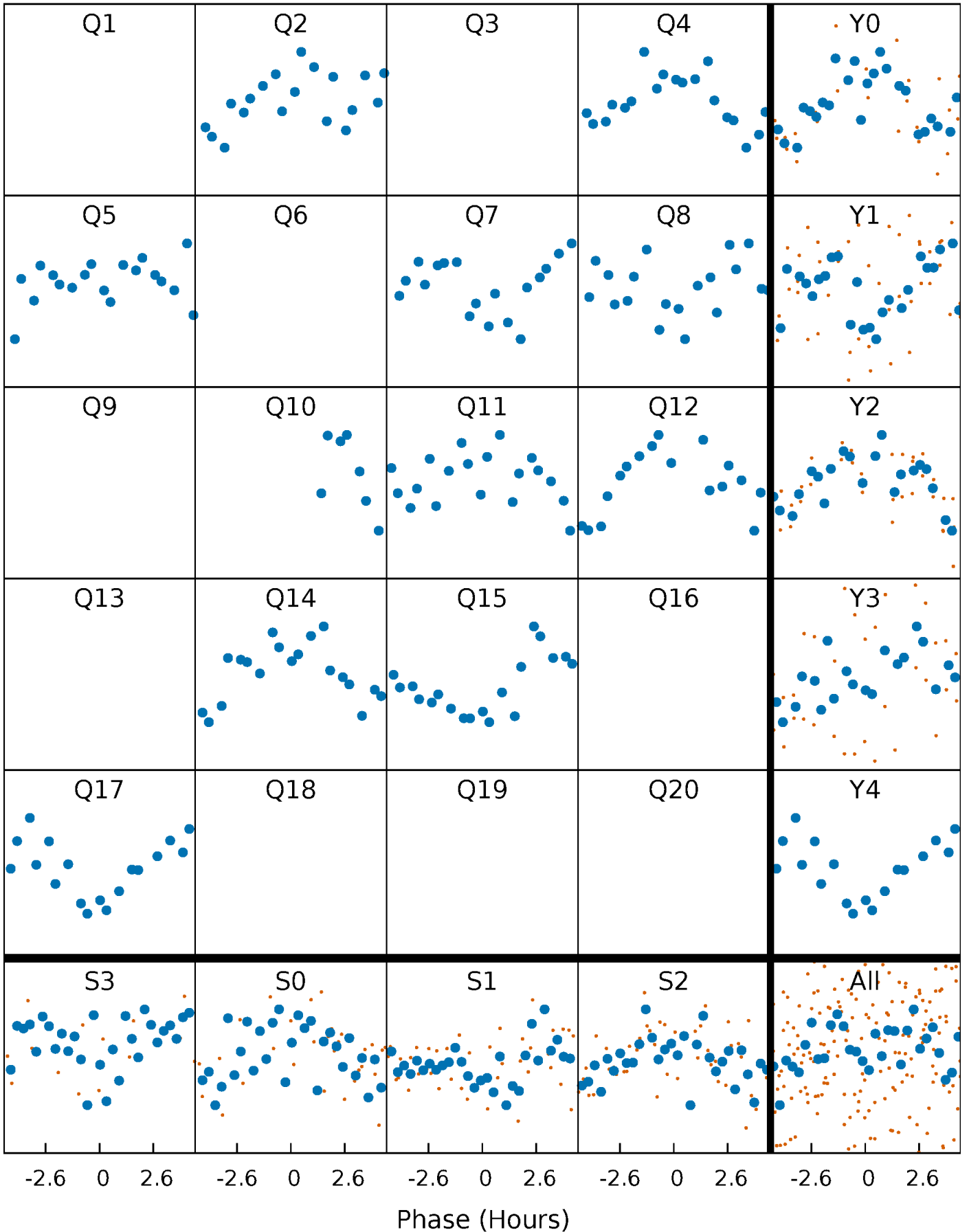


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



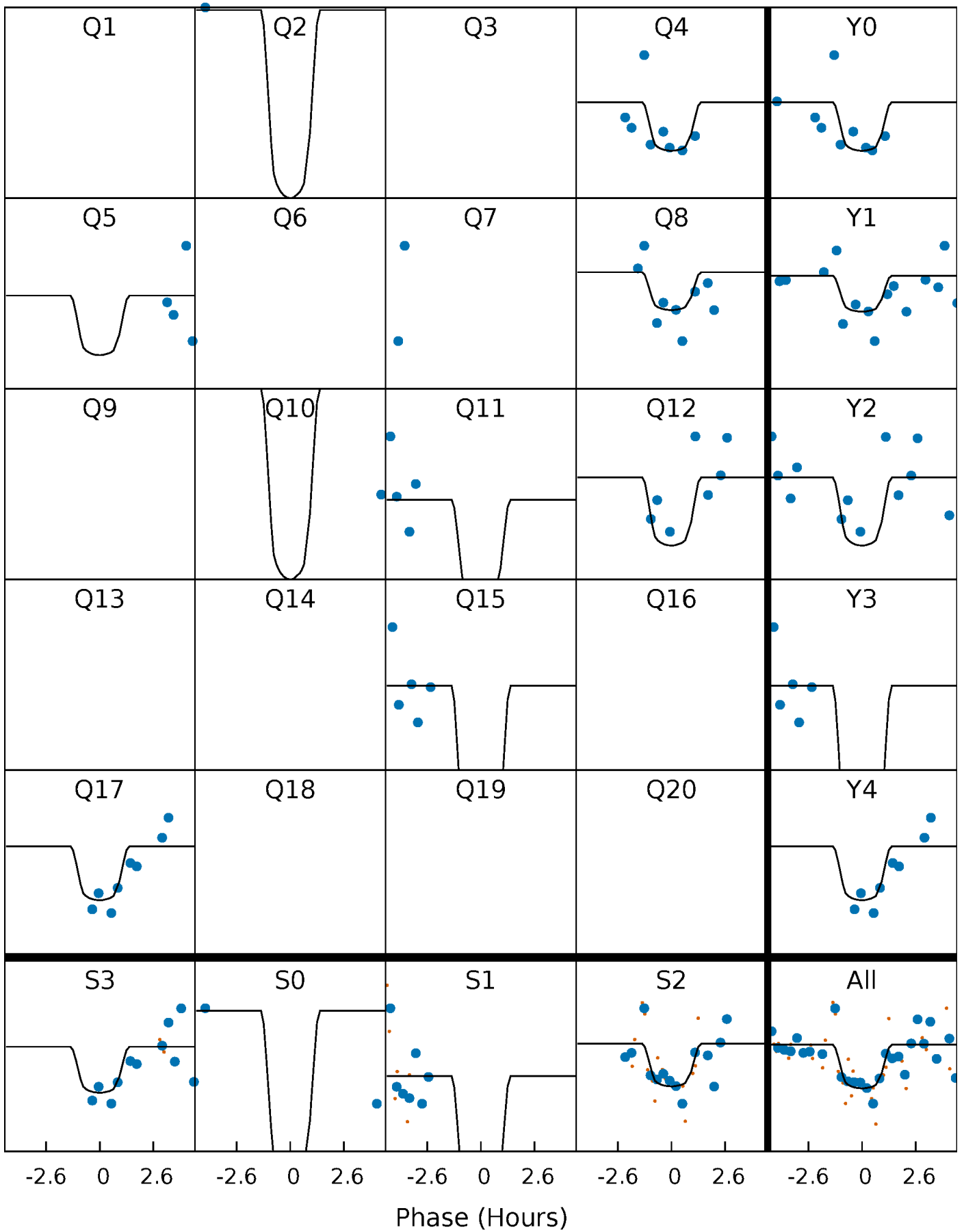
PDC Quarter-Phased Transit Curves

TCE 005905234-02 P=132.550913 Days $T_0=244.057038$ (BKJD)



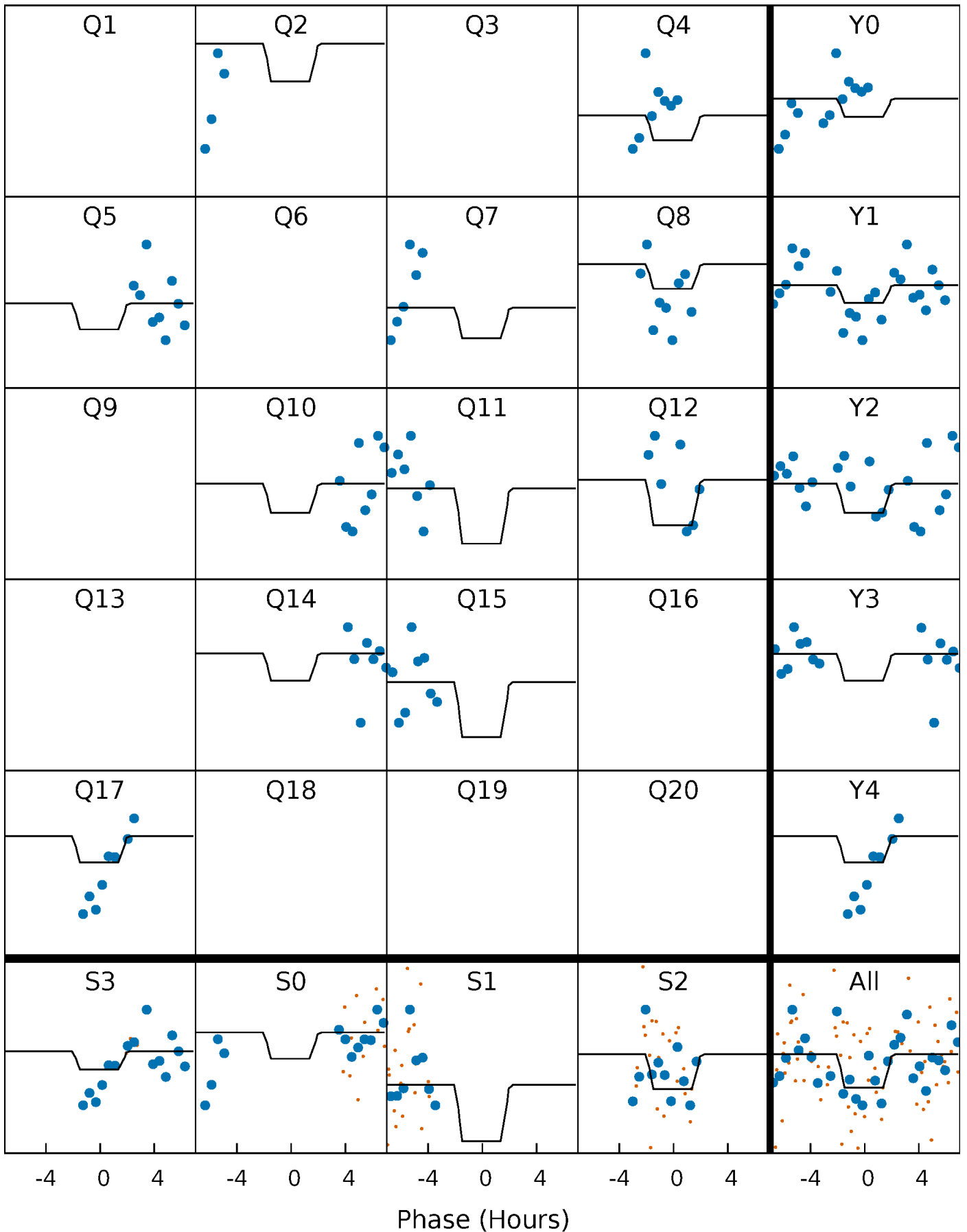
DV Quarter-Phased Transit Curves

TCE 005905234-02 P=132.550913 Days $T_0=244.057038$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

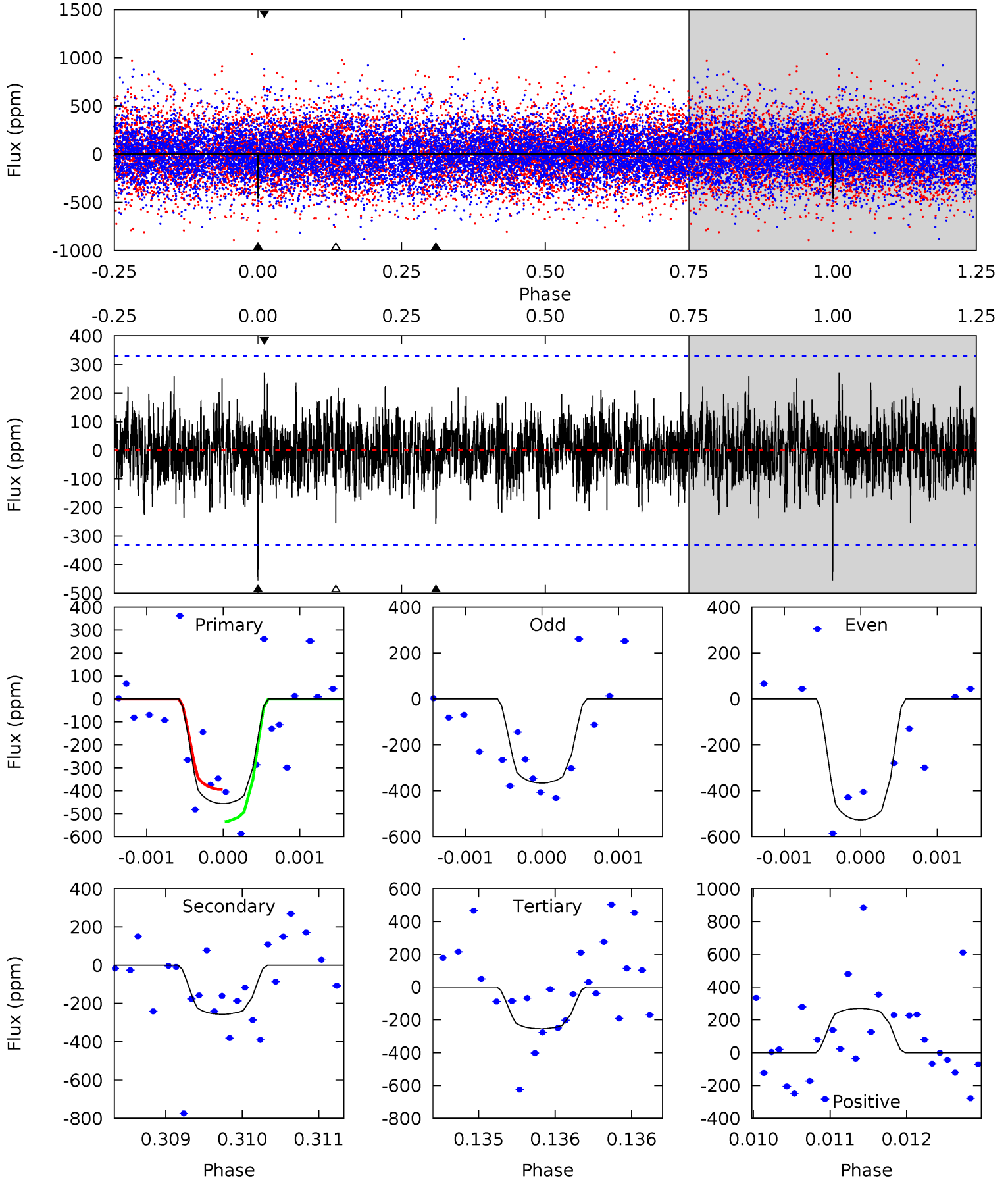
TCE 005905234-02 P=132.551477 Days $T_0=244.091907$ (BKJD)



DV Model-Shift Uniqueness Test

005905234-02, P = 132.550913 Days, E = 111.506125 Days

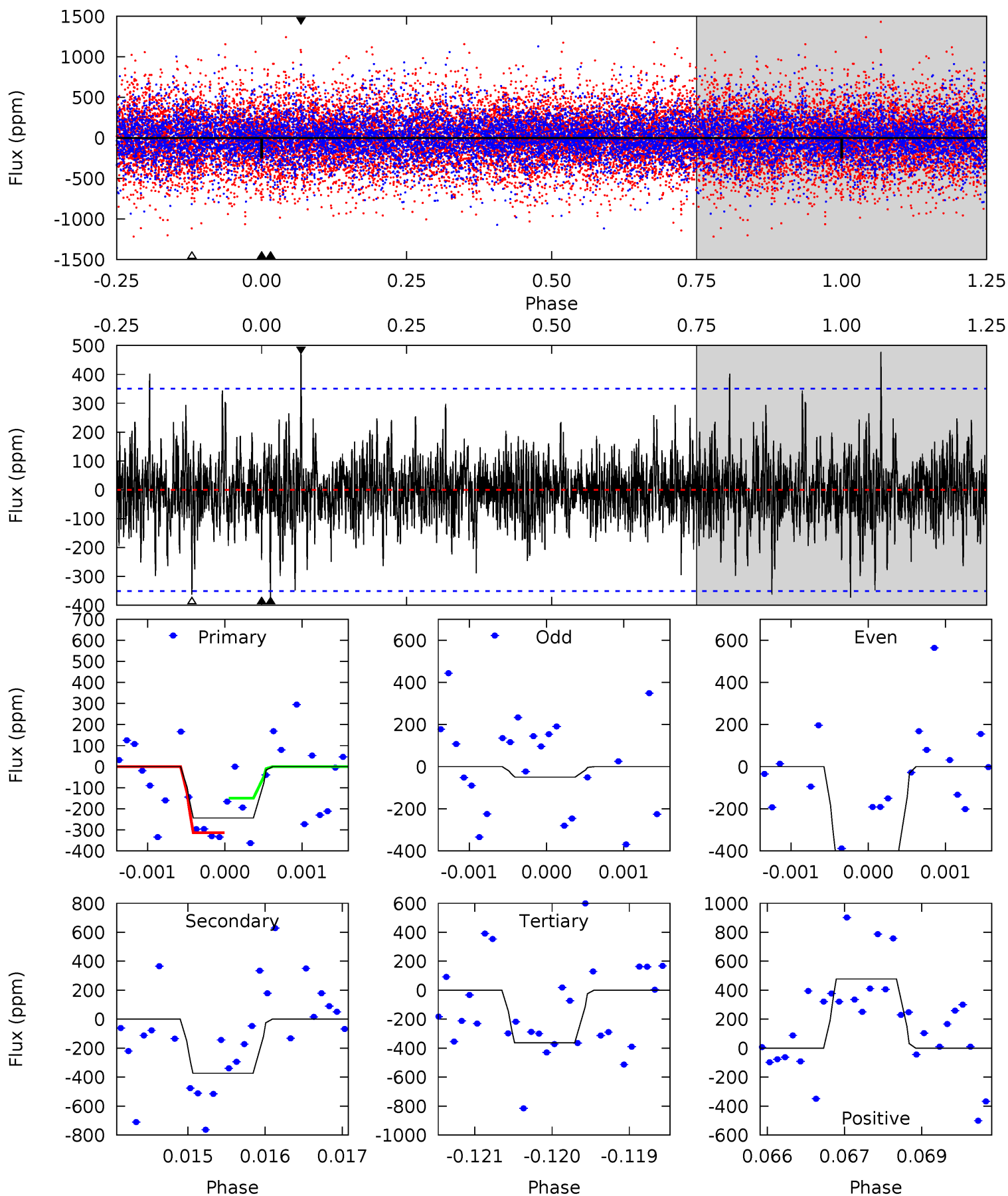
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.60	4.28	4.24	4.49	5.50	3.36	1.24	3.36	3.11	0.04	-0.21	1.33	0.96	0.37	1.16



Alt Model-Shift Uniqueness Test

005905234-02, P = 132.551477 Days, E = 111.540430 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.77	5.77	5.62	7.39	5.43	3.25	1.38	-1.85	-3.63	0.16	-1.62	3.11	0.84	0.56	1.26



Stellar Parameters For KIC 005905234

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6971^{+194}_{-305}	$4.232^{+0.108}_{-0.201}$	$-0.060^{+0.250}_{-0.350}$	$1.493^{+0.508}_{-0.274}$	$1.394^{+0.216}_{-0.216}$	$0.590^{+0.306}_{-0.321}$
	+3%/-4%	+3%/-5%	+417%/-583%	+34%/-18%	+15%/-15%	+52%/-54%
Source	PHO54	PHO54	PHO54	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 005905234-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-257 ± 60	$6.67^{+7.28}_{-4.37}$	702^{+54}_{-45}	4534^{+3014}_{-1026}	978^{+7553}_{-752}
Alt.	-373 ± 65	$6.07^{+7.25}_{-4.04}$	704^{+56}_{-44}	5129^{+4358}_{-1322}	1808^{+14647}_{-1445}

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 $A_{obs} \gg 1.0$

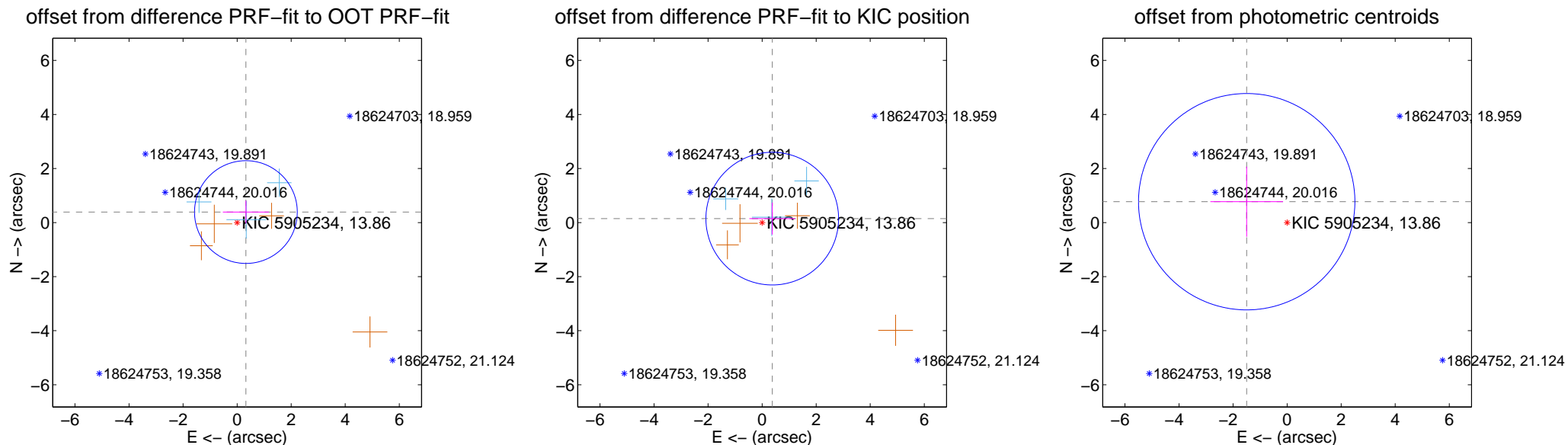
DV Centroid Data

Supplemental centroid analysis for 005905234-02. Kepler magnitude: 13.86. Transit SNR 7.62

There are 3 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.13 arcsec

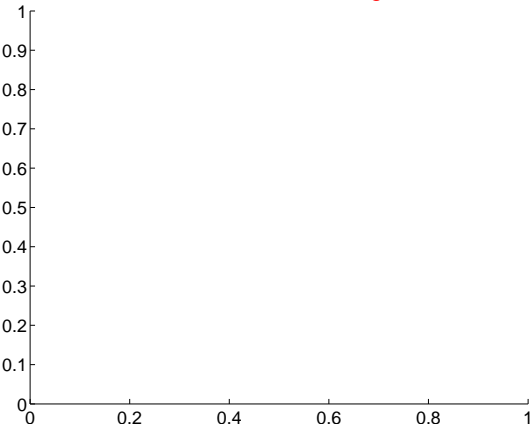
	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.507 ± 0.634	0.80	-0.324 ± 0.852	0.389 ± 0.419
PRF-fit source offset from KIC position	0.402 ± 0.818	0.49	-0.375 ± 0.847	0.146 ± 0.591
photometric centroid source offset	1.68 ± 1.33	1.26	1.49 ± 1.34	0.77 ± 1.30



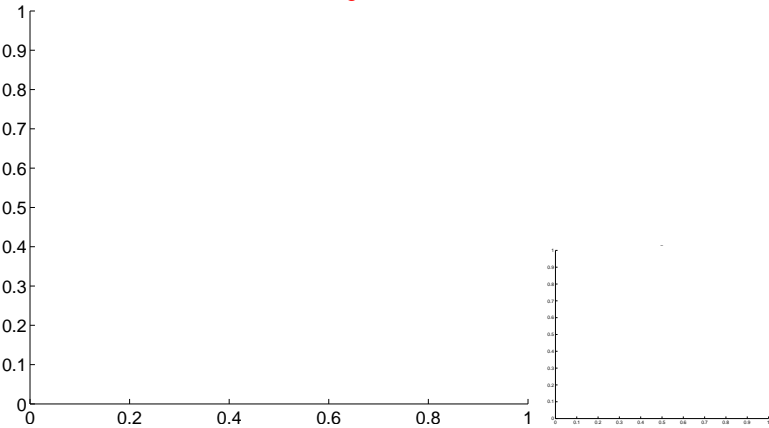
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

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

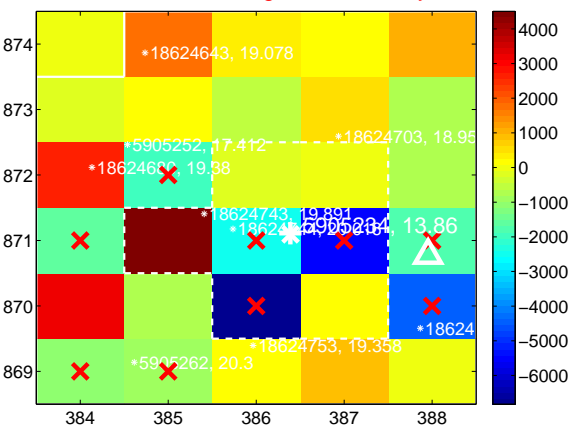
Q1 no difference image



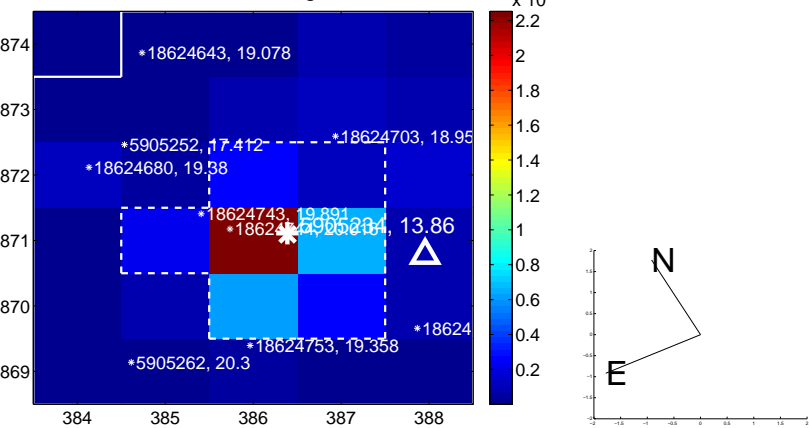
Q1 no OOT image



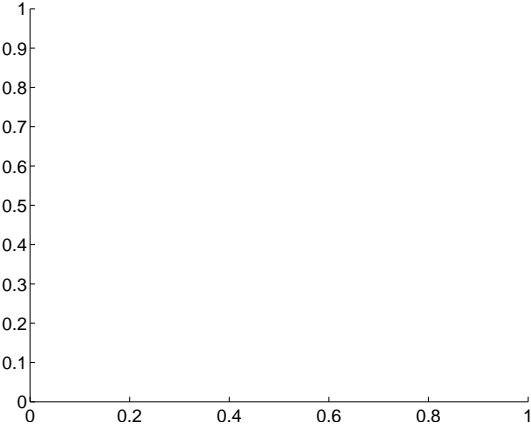
Q2 difference image. Poor Quality



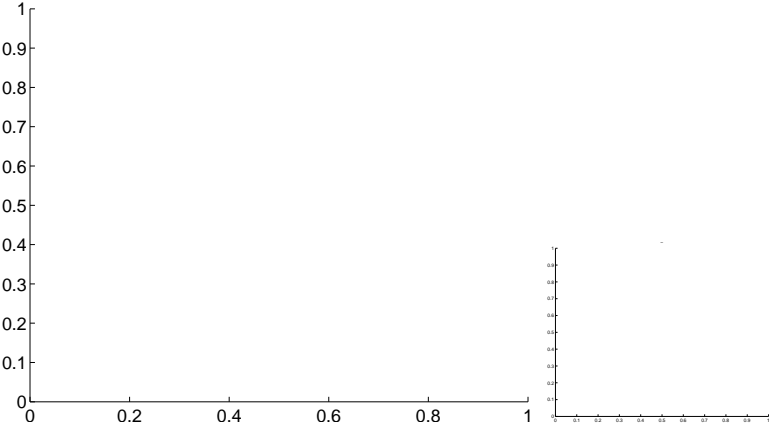
Q2 OOT image



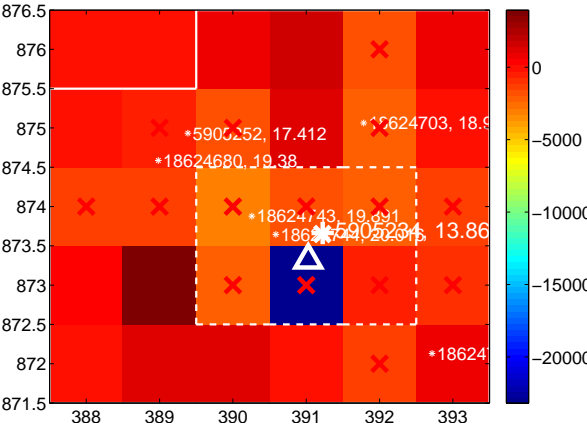
Q3 no difference image



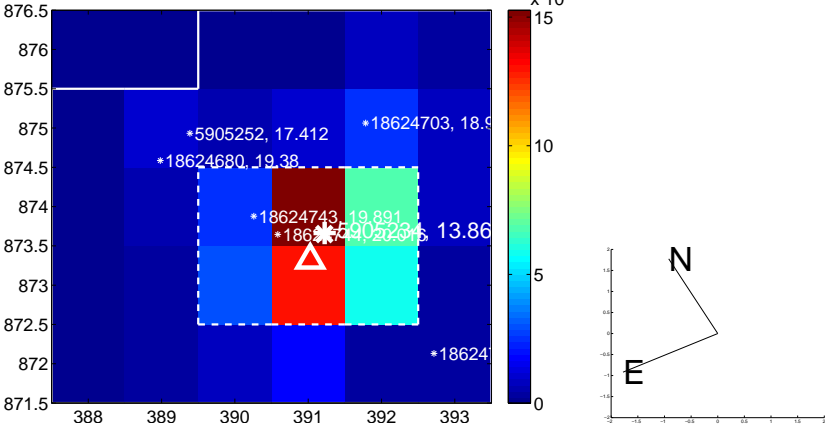
Q3 no OOT image



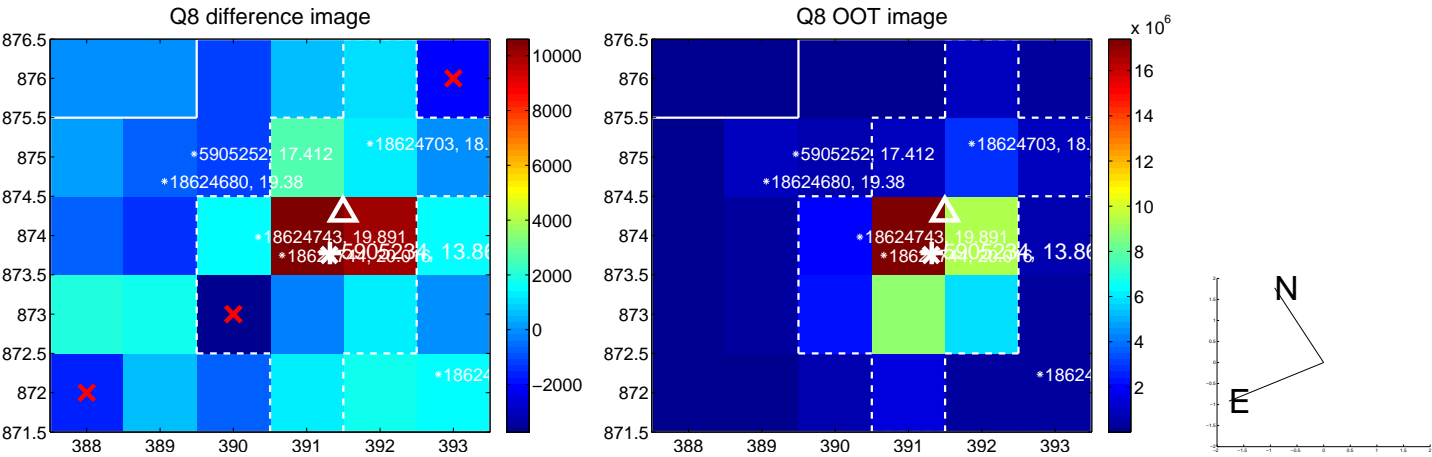
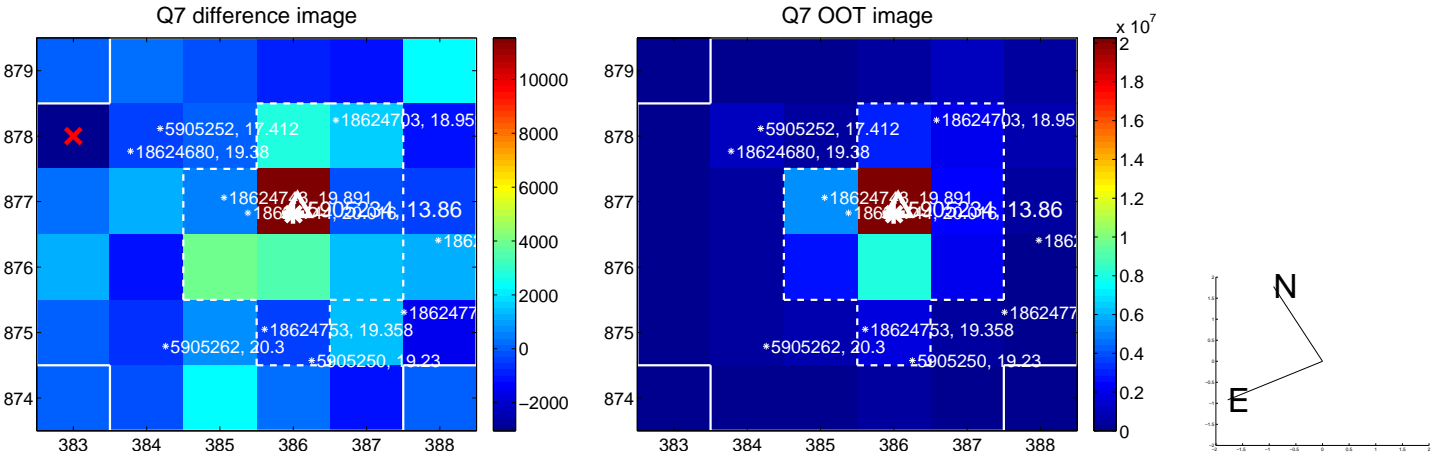
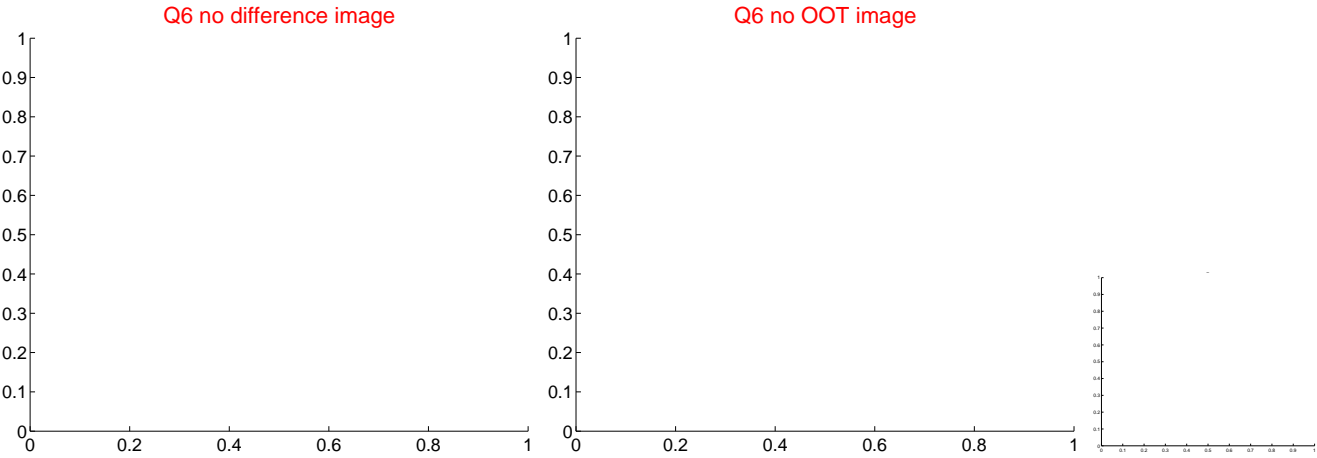
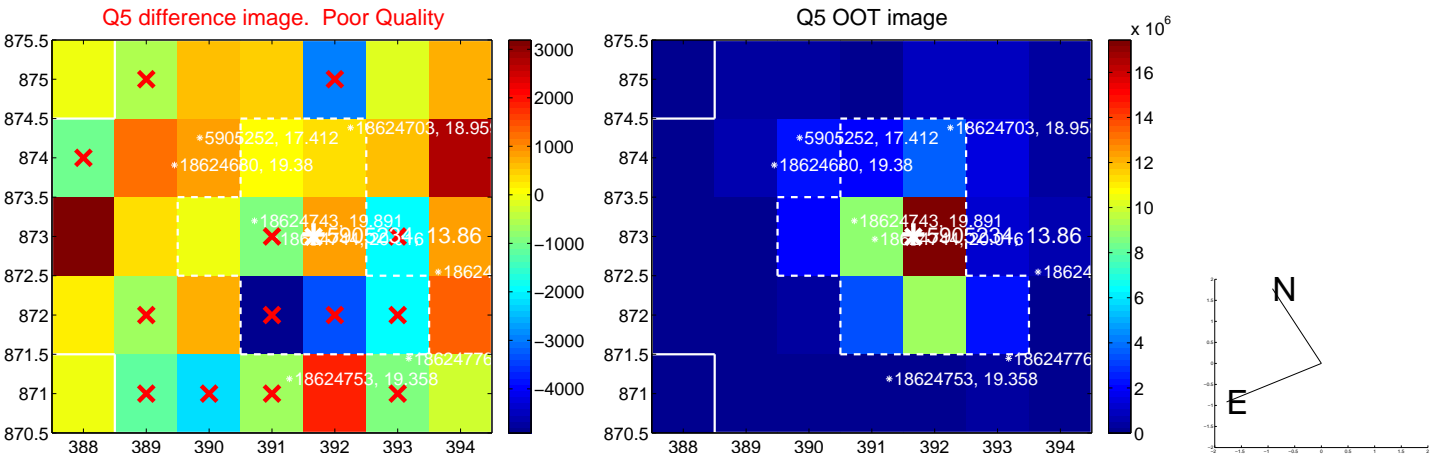
Q4 difference image. Poor Quality



Q4 OOT image



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



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

Q9 no difference image



Q9 no OOT image



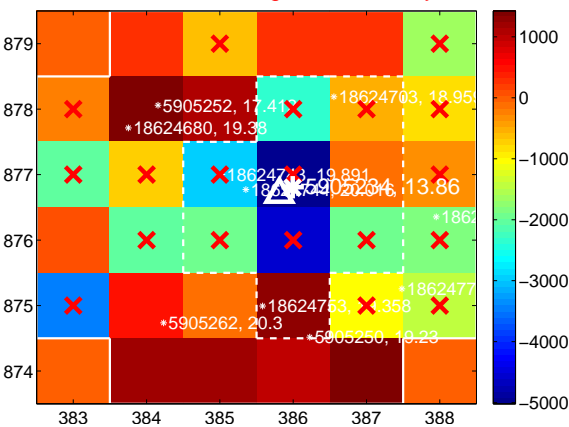
Q10 no difference image



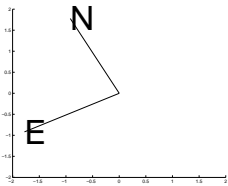
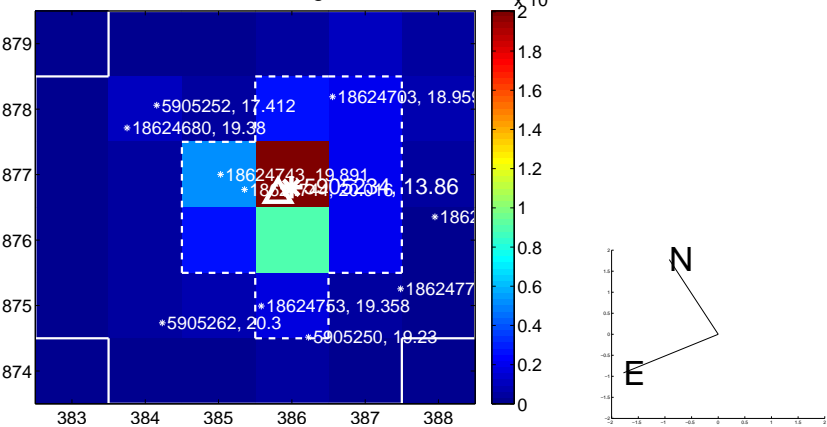
Q10 no OOT image



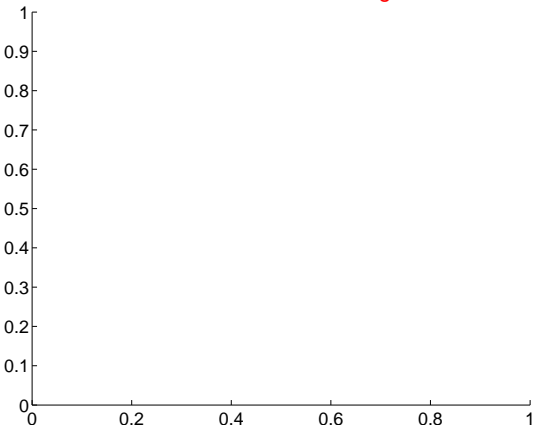
Q11 difference image. Poor Quality



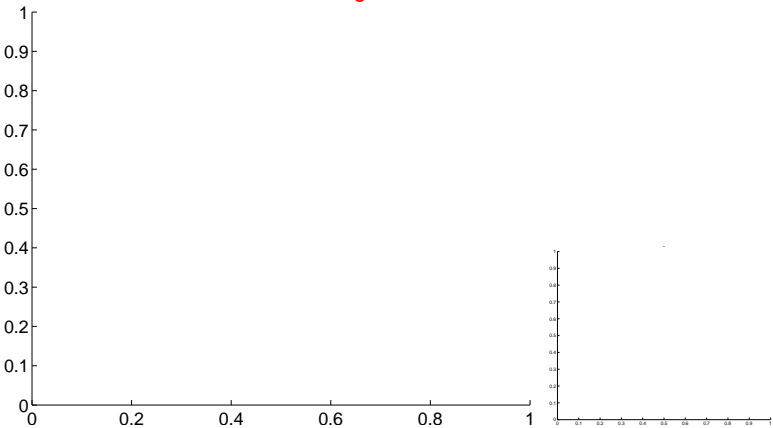
Q11 OOT image



Q12 no difference image



Q12 no OOT image



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

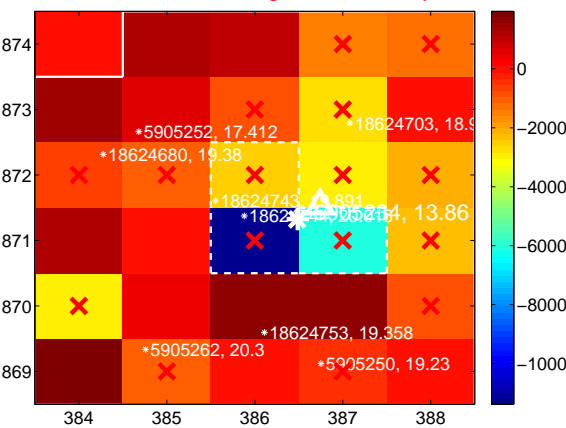
Q13 no difference image



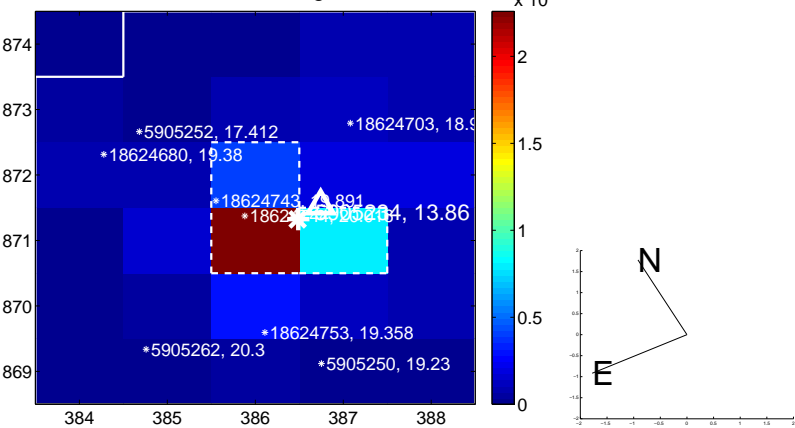
Q13 no OOT image



Q14 difference image. Poor Quality



Q14 OOT image



Q15 no difference image



Q15 no OOT image



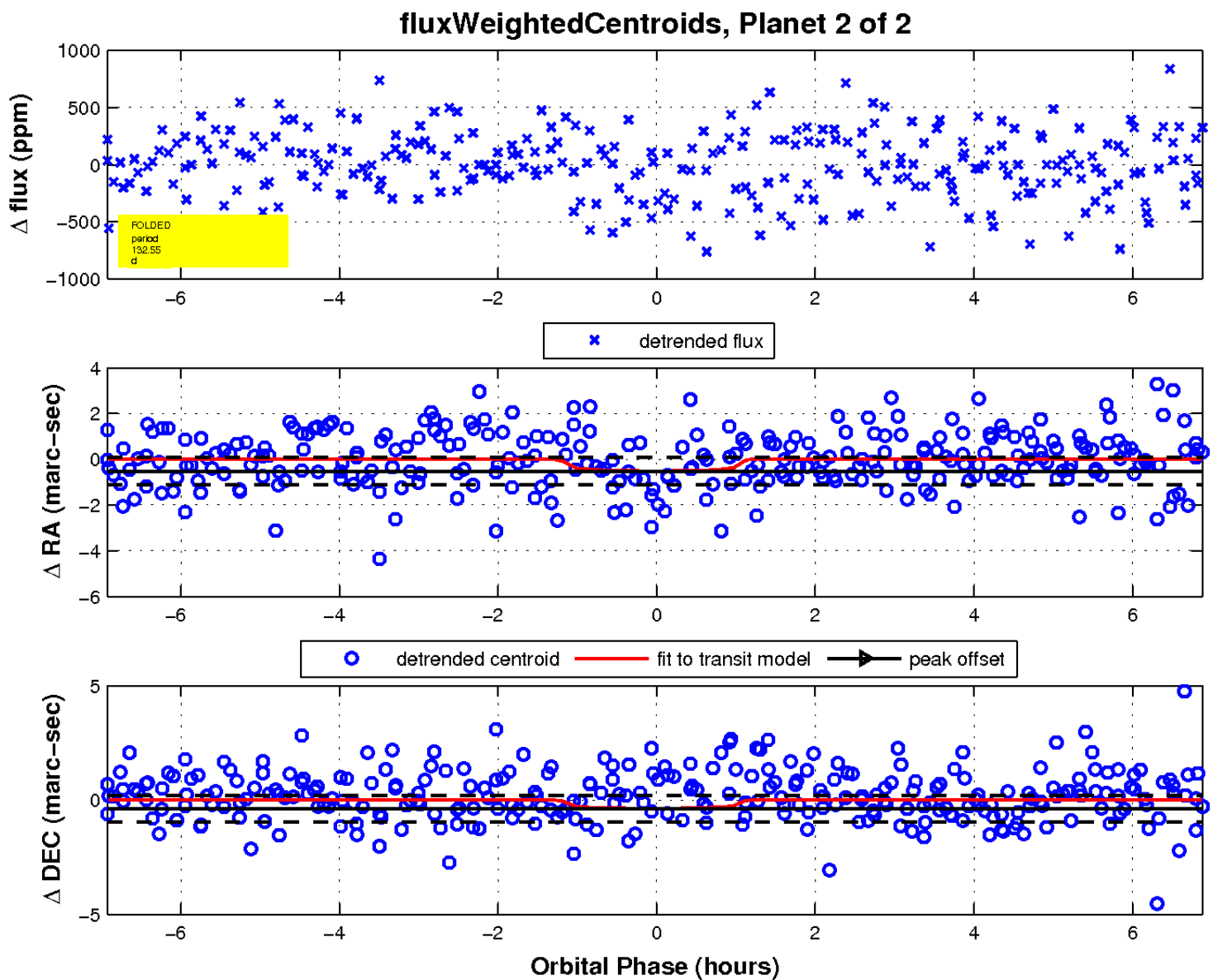
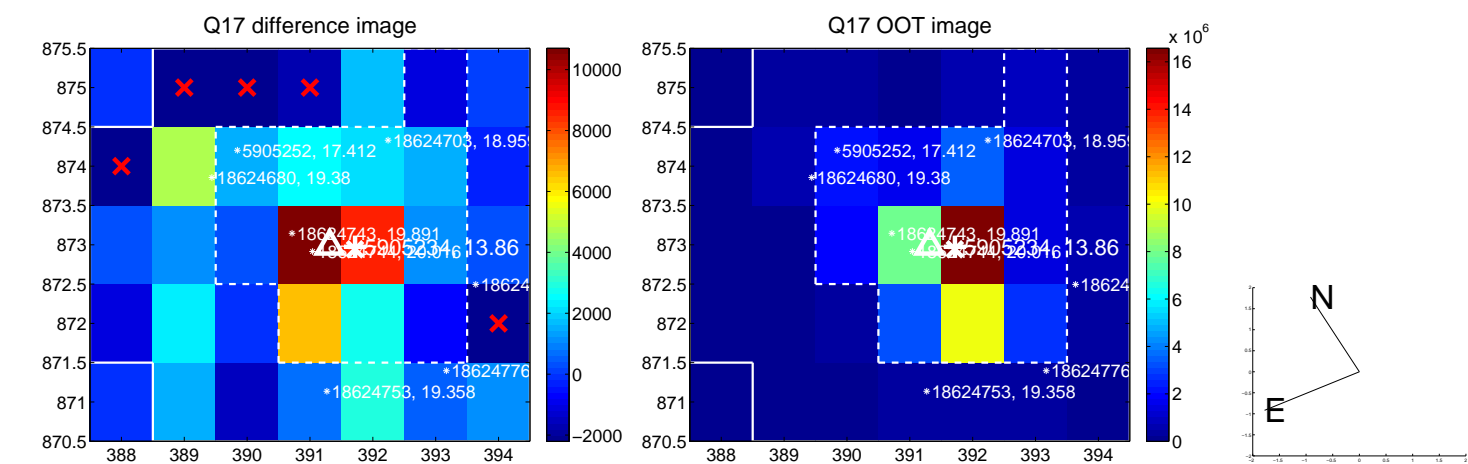
Q16 no difference image



Q16 no OOT image



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



UKIRT Image

