

KIC 005637237

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})
005637237-01	OBS	No	1.130667	132.355047	14.8	5.369	8.3	9.4	2.27	7498	0.90	22460.70
005637237-02	OBS	No	148.746639	274.812227	289.1	3.416	8.0	8.0	2.27	7498	4.48	33.57

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005637237-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT
005637237-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS

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

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

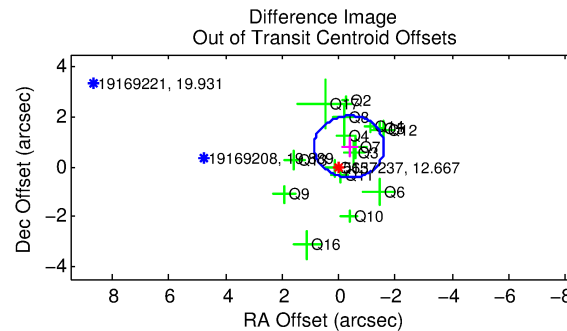
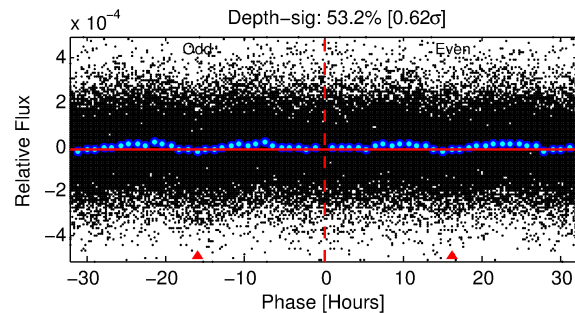
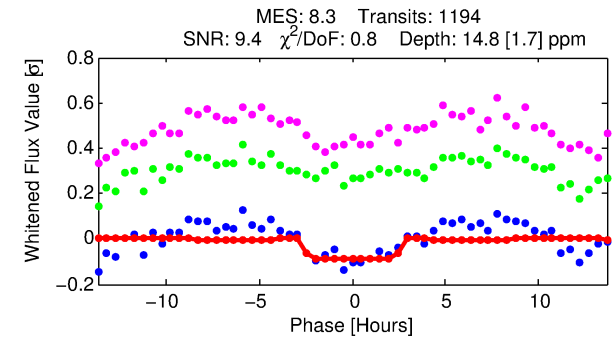
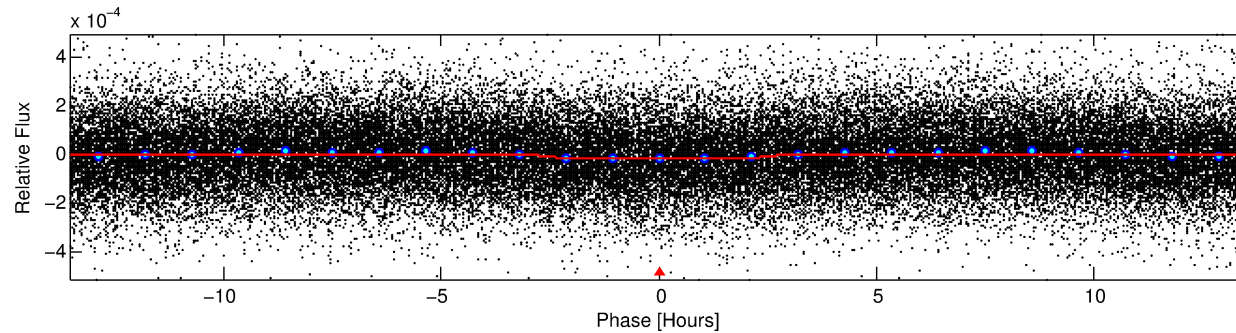
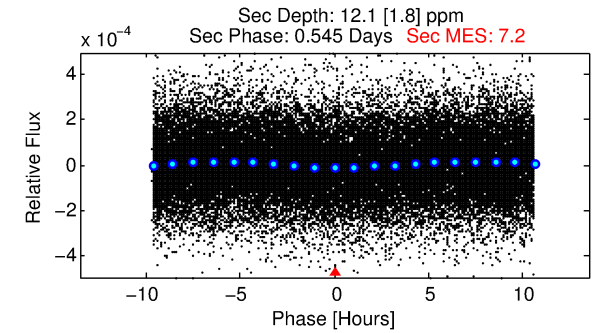
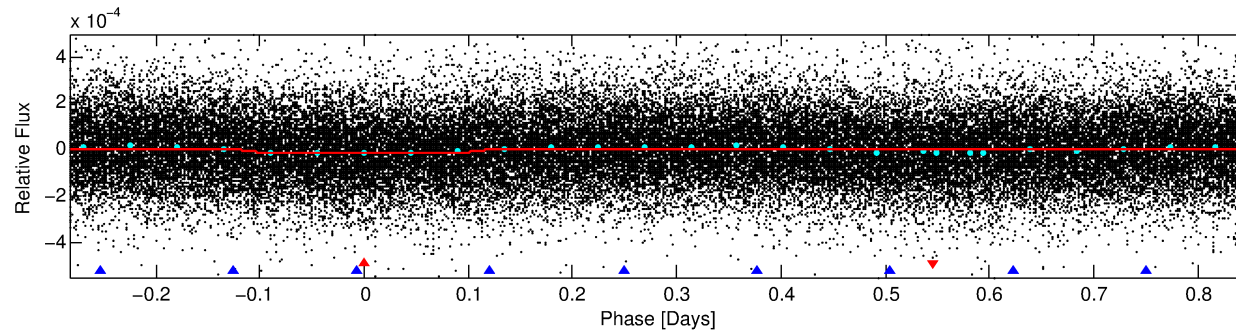
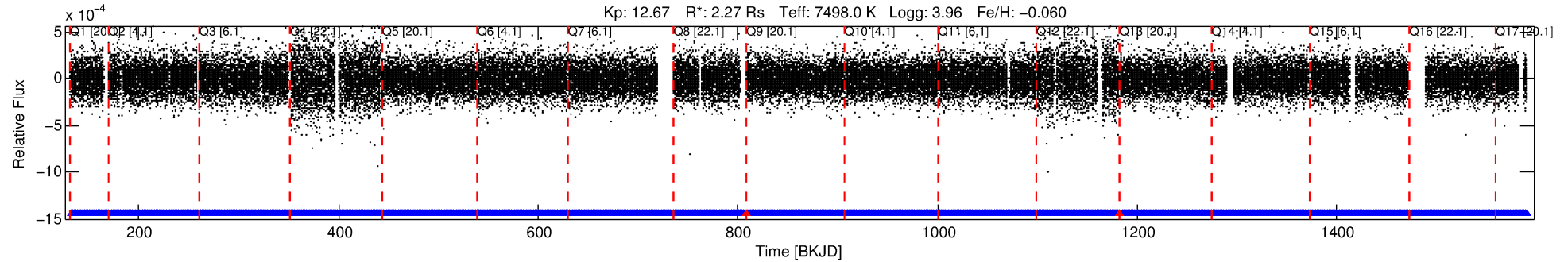
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005637237-01

No Significant Match Found

DV One-Page Summary

KIC: 5637237 Candidate: 1 of 2 Period: 1.131 d



DV Fit Results:

Period = 1.13067 [0.00002] d
Epoch = 132.3550 [0.0051] BKJD
Rp/R* = 0.0036 [0.0011]
a/R* = 1.60 [1.87]
b = 0.46 [3.30]
Seff = 22460.70 [9792.04]
Teq = 3122 [340] K
Rp = 0.90 [0.39] Re
a = 0.0255 [0.0068] AU
Ag = 5.31 [4.05] [1.07σ]
Teffp = 7327 [1225] K [3.31σ]

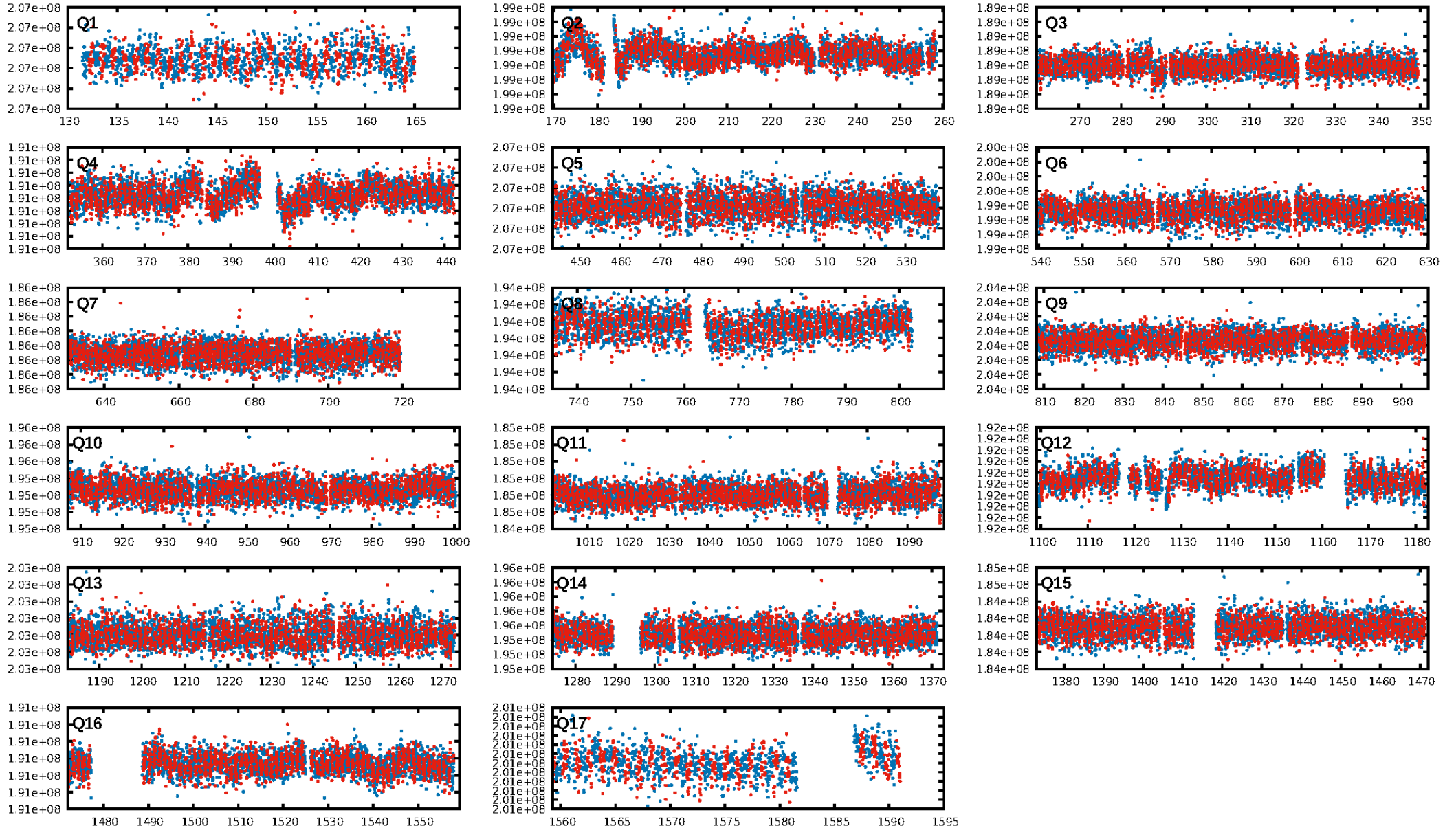
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [556.72σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.66e-10
RollingBand-fgt: 1.00 [1139/1141]
GhostDiagnostic-chr: 1.25
Centroid-sig: 0.0%
Centroid-so: 2.067 arcsec [2.36σ]
OotOffset-rm: 0.880 arcsec [2.13σ]
KicOffset-rm: 0.961 arcsec [2.36σ]
OotOffset-st: 4/4/4/4 [16]
KicOffset-st: 4/4/4/4 [16]
DiffImageQuality-fgm: 0.94 [15/16]
DiffImageOverlap-fno: 1.00 [17/17]

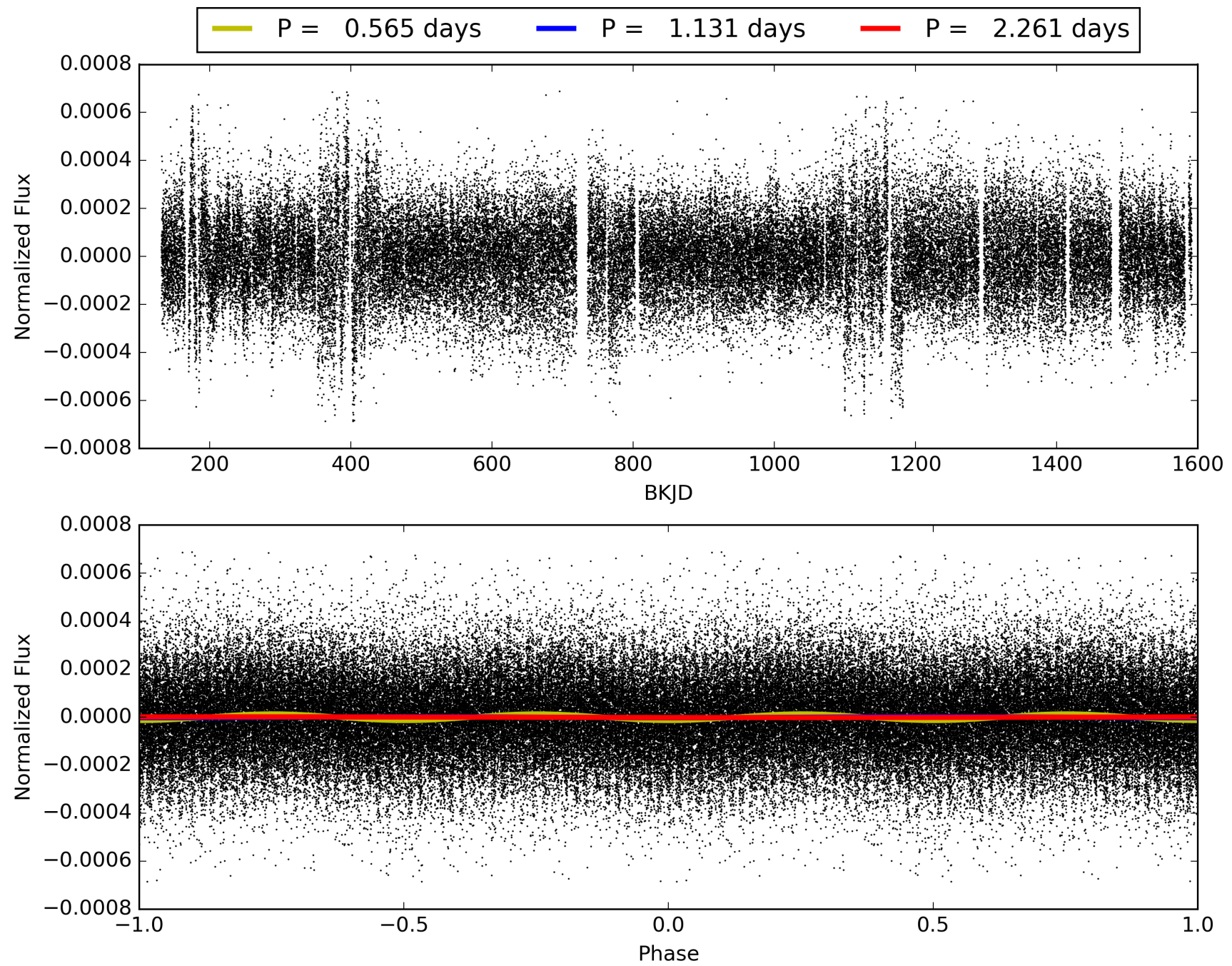
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 17:52:34 Z

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

TCE 005637237-01, PDC Light Curves

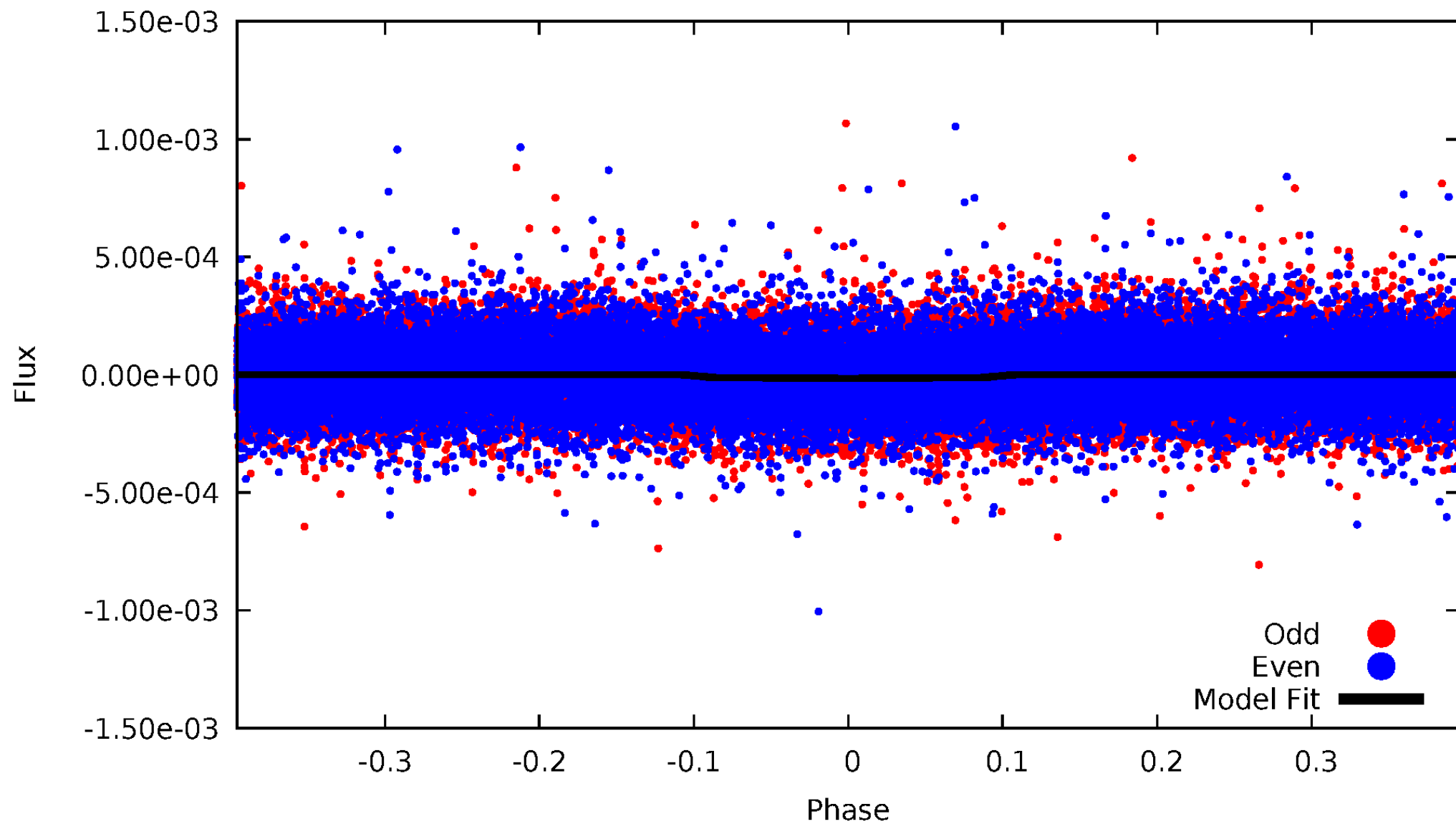


TCE 005637237-01



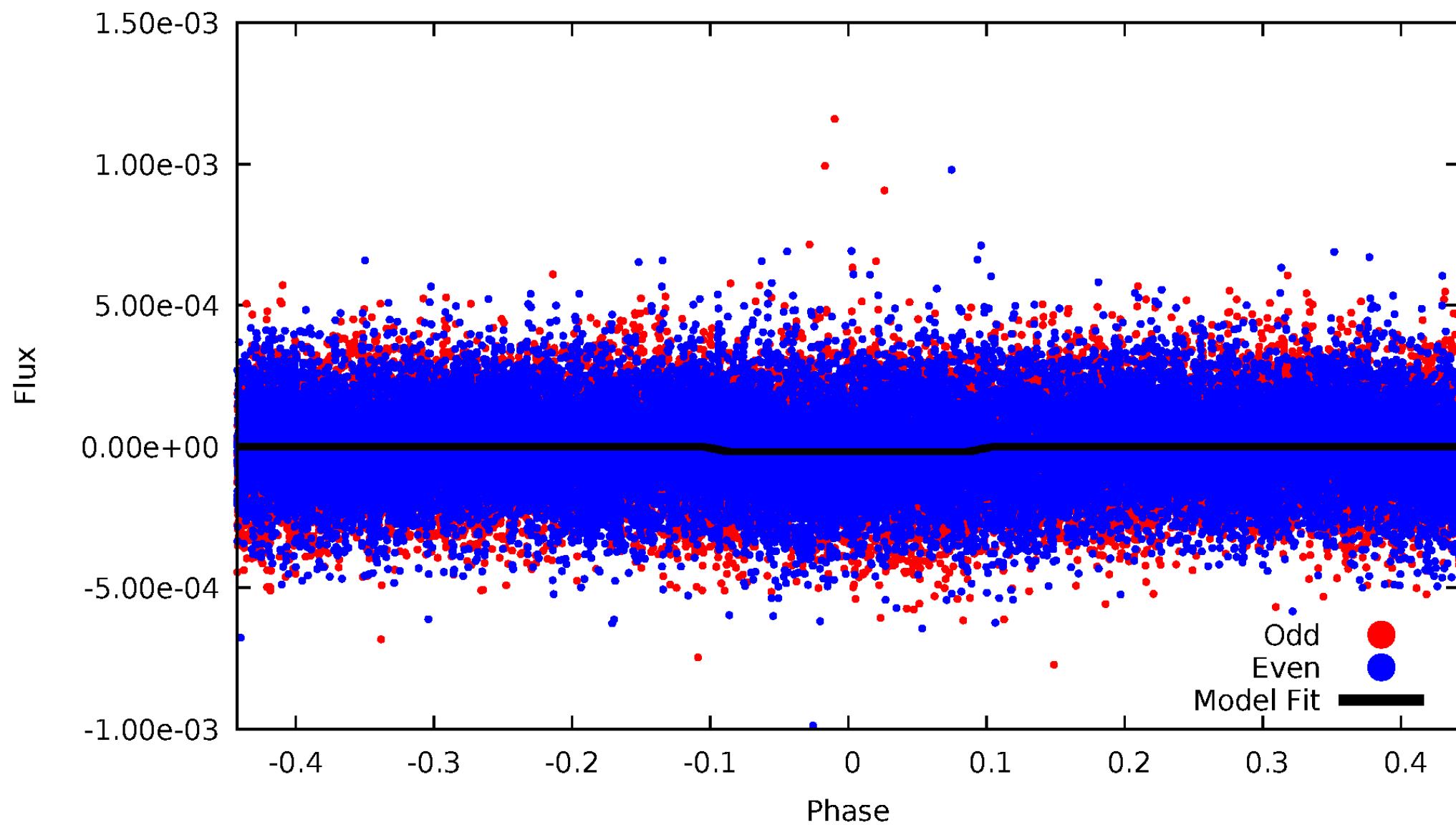
DV Odd/Even

TCE 005637237-01



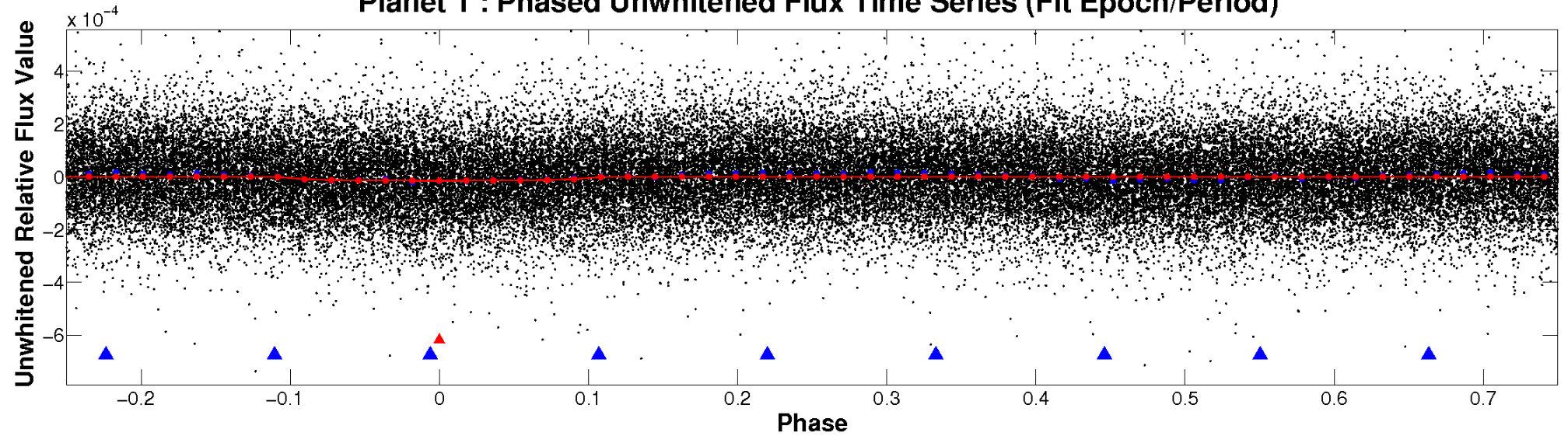
ALT Odd/Even

TCE 005637237-01

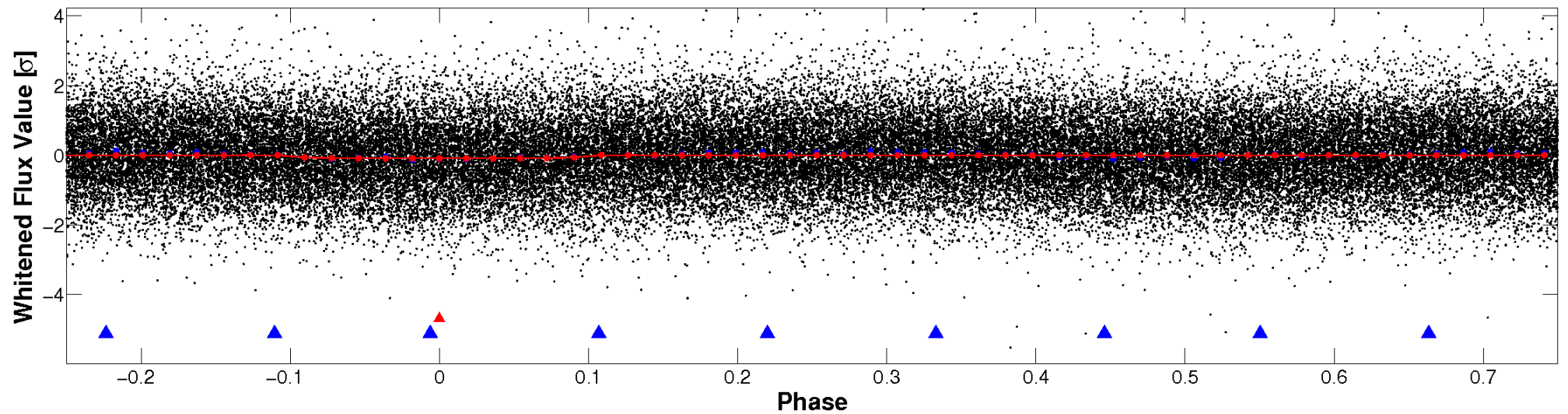


Non-Whitened Vs. Whitened Light Curve

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

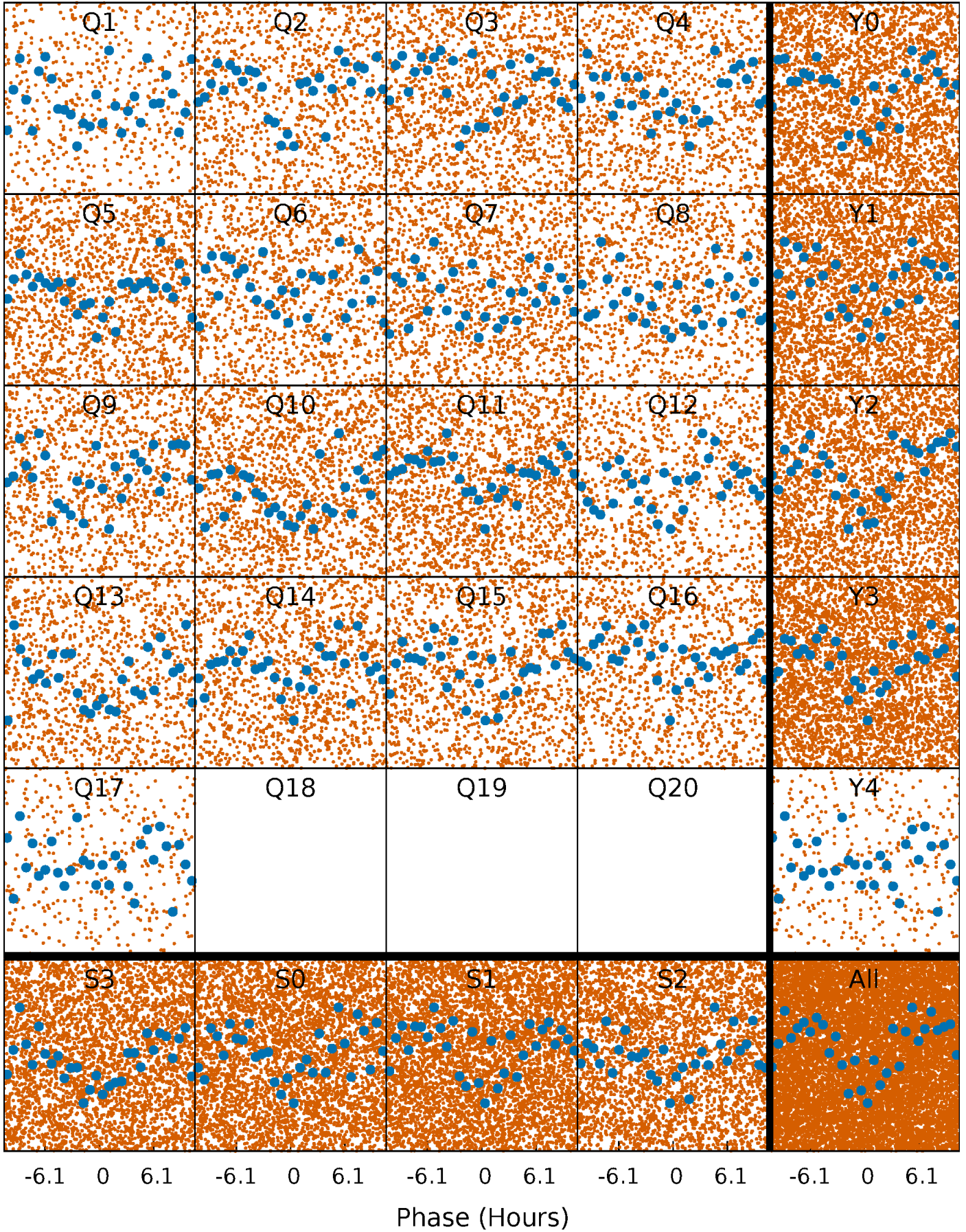


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



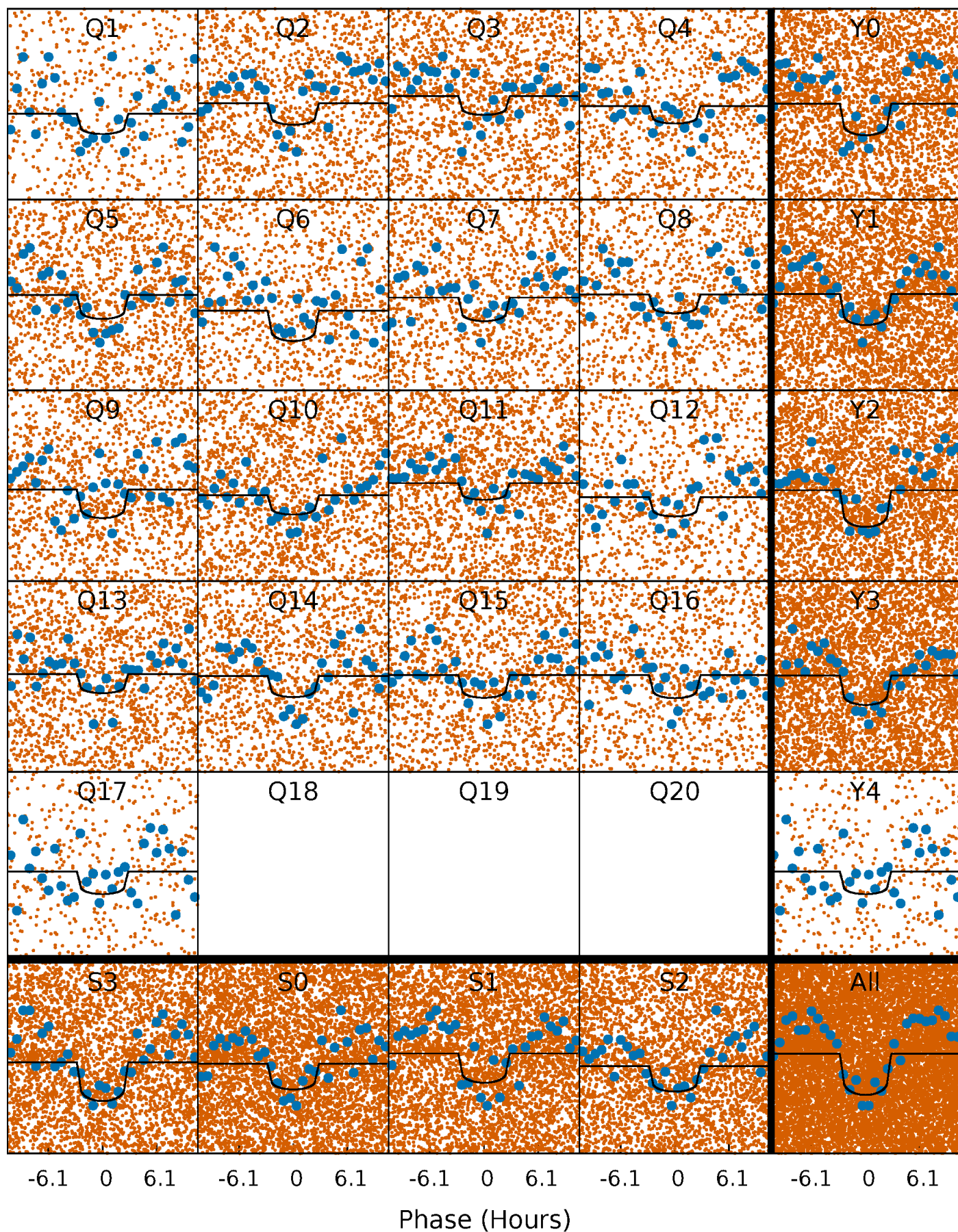
PDC Quarter-Phased Transit Curves

TCE 005637237-01 P= 1.130667 Days $T_0=132.355047$ (BKJD)



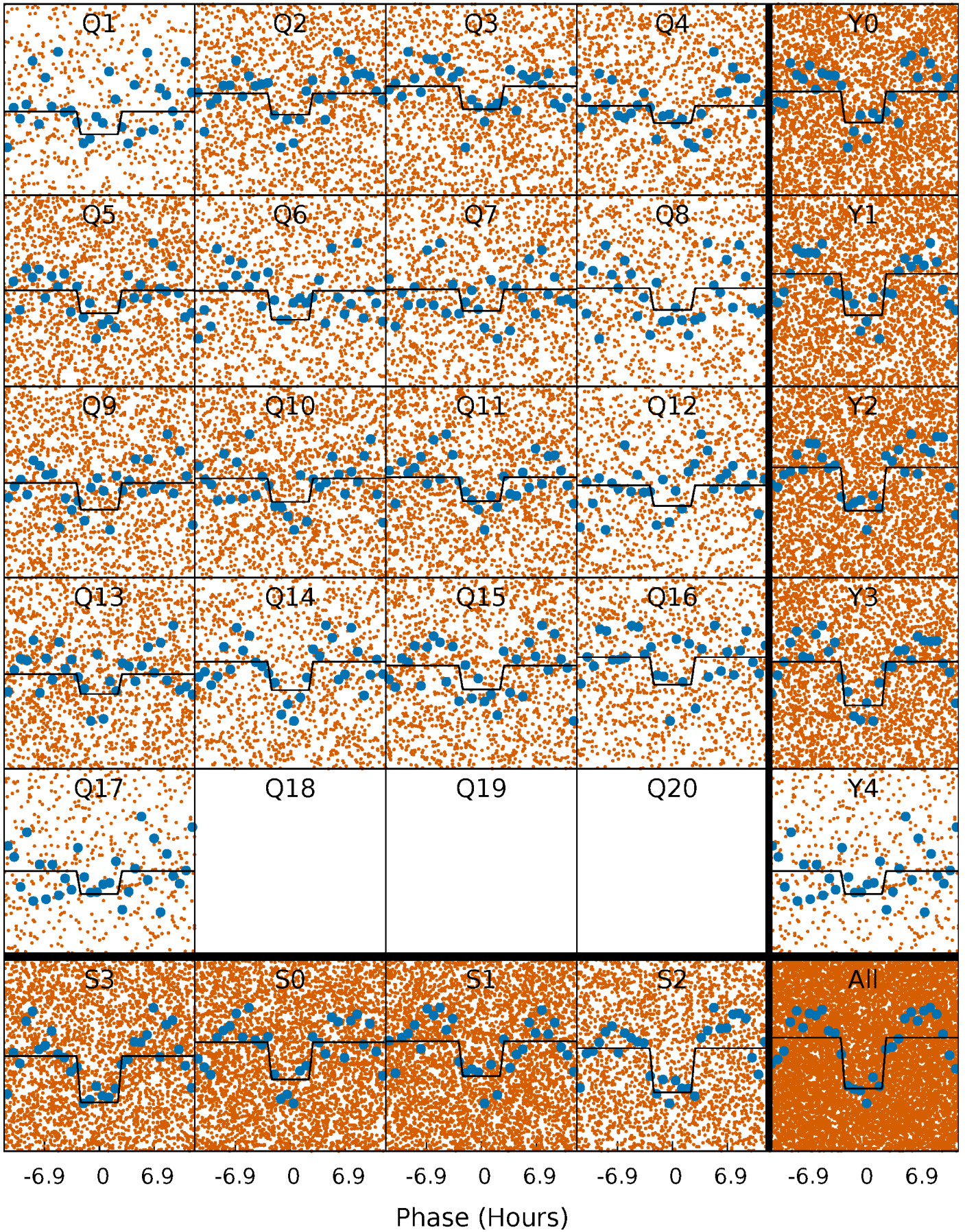
DV Quarter-Phased Transit Curves

TCE 005637237-01 P= 1.130667 Days $T_0=132.355047$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

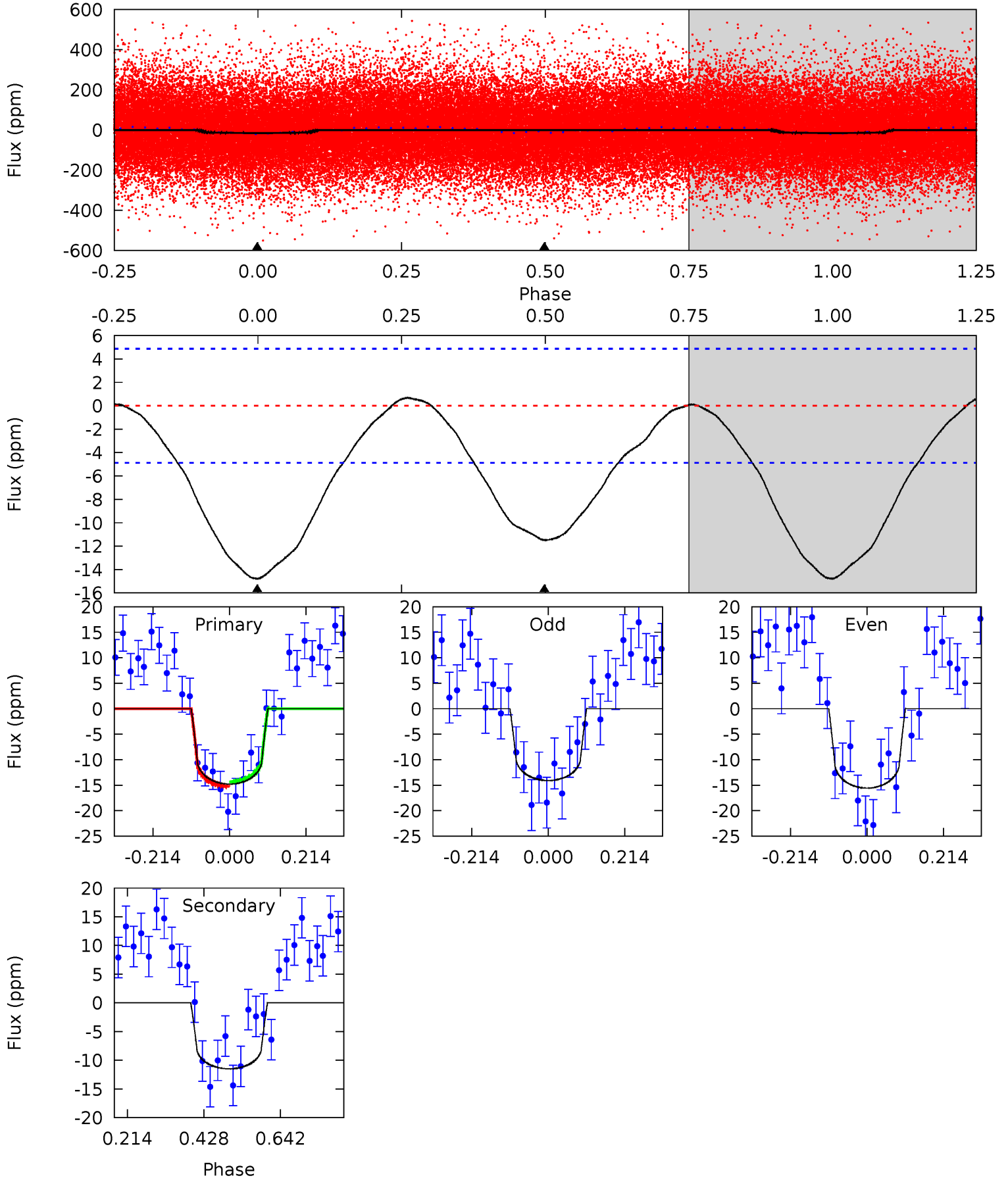
TCE 005637237-01 P= 1.130703 Days $T_0=132.331221$ (BKJD)



DV Model-Shift Uniqueness Test

005637237-01, P = 1.130667 Days, E = 131.224380 Days

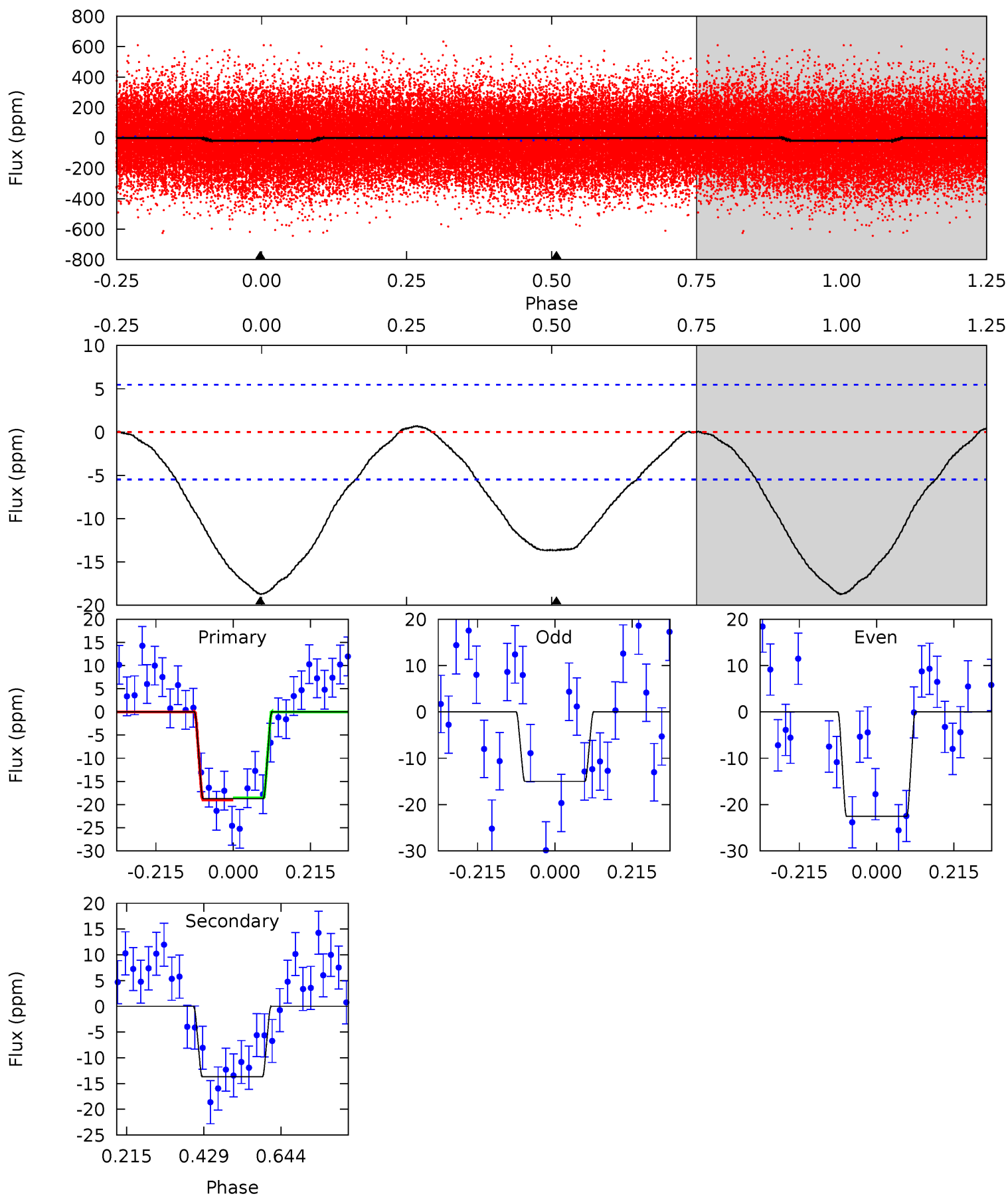
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.4	10.4	0	0	4.40	1.24	0.38	13.4	13.4	10.4	10.4	0.67	0.99	0.04	0.40



Alt Model-Shift Uniqueness Test

005637237-01, P = 1.130703 Days, E = 131.200518 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.1	11.0	0	0	4.40	1.24	0.42	15.1	15.1	11.0	11.0	3.01	0.86	0.04	0.18



Stellar Parameters For KIC 005637237

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7498^{+209}_{-314}	$3.964^{+0.228}_{-0.152}$	$-0.060^{+0.200}_{-0.350}$	$2.274^{+0.555}_{-0.678}$	$1.735^{+0.185}_{-0.317}$	$0.208^{+0.290}_{-0.093}$
	+3%/-4%	+6%/-4%	+333%/-583%	+24%/-30%	+11%/-18%	+140%/-45%
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 005637237-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-11 ± 1	$0.87^{+0.32}_{-0.28}$	4327^{+323}_{-350}	7061^{+1908}_{-1044}	$5.350^{+6.343}_{-2.535}$
Alt.	-14 ± 1	$1.02^{+0.35}_{-0.30}$	4311^{+329}_{-360}	6766^{+1422}_{-912}	$4.679^{+4.721}_{-2.055}$

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

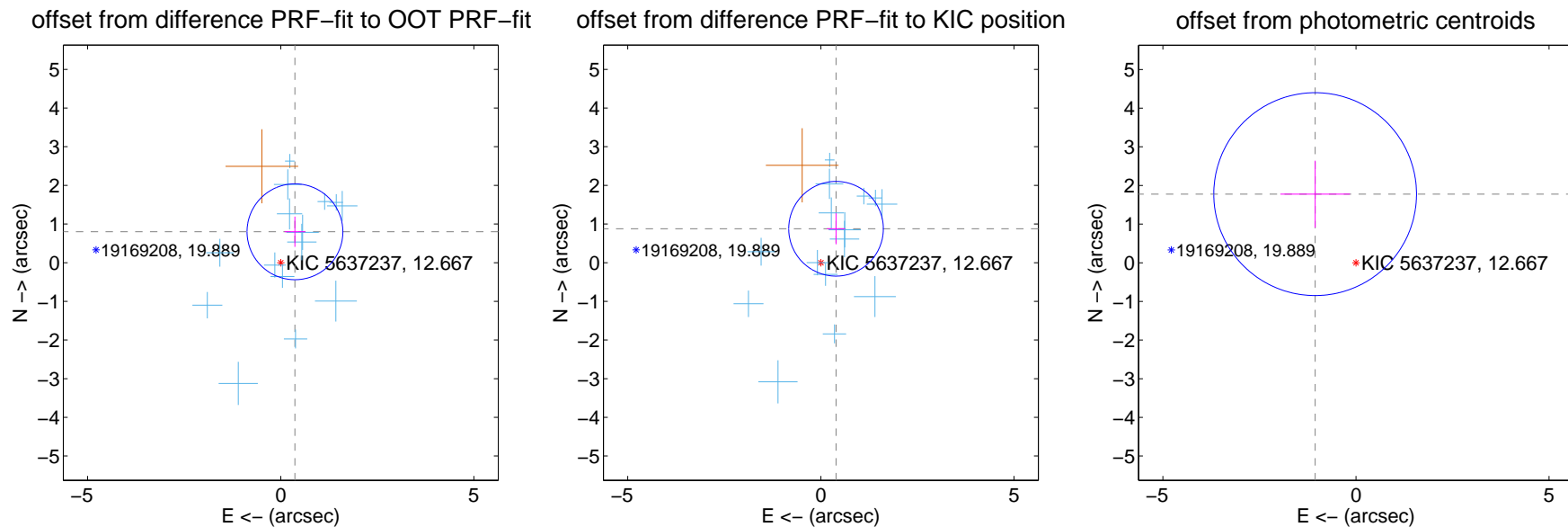
DV Centroid Data

Supplemental centroid analysis for 005637237-01. Kepler magnitude: 12.67. Transit SNR 9.43

There are 15 quarters with good PRF difference image offsets

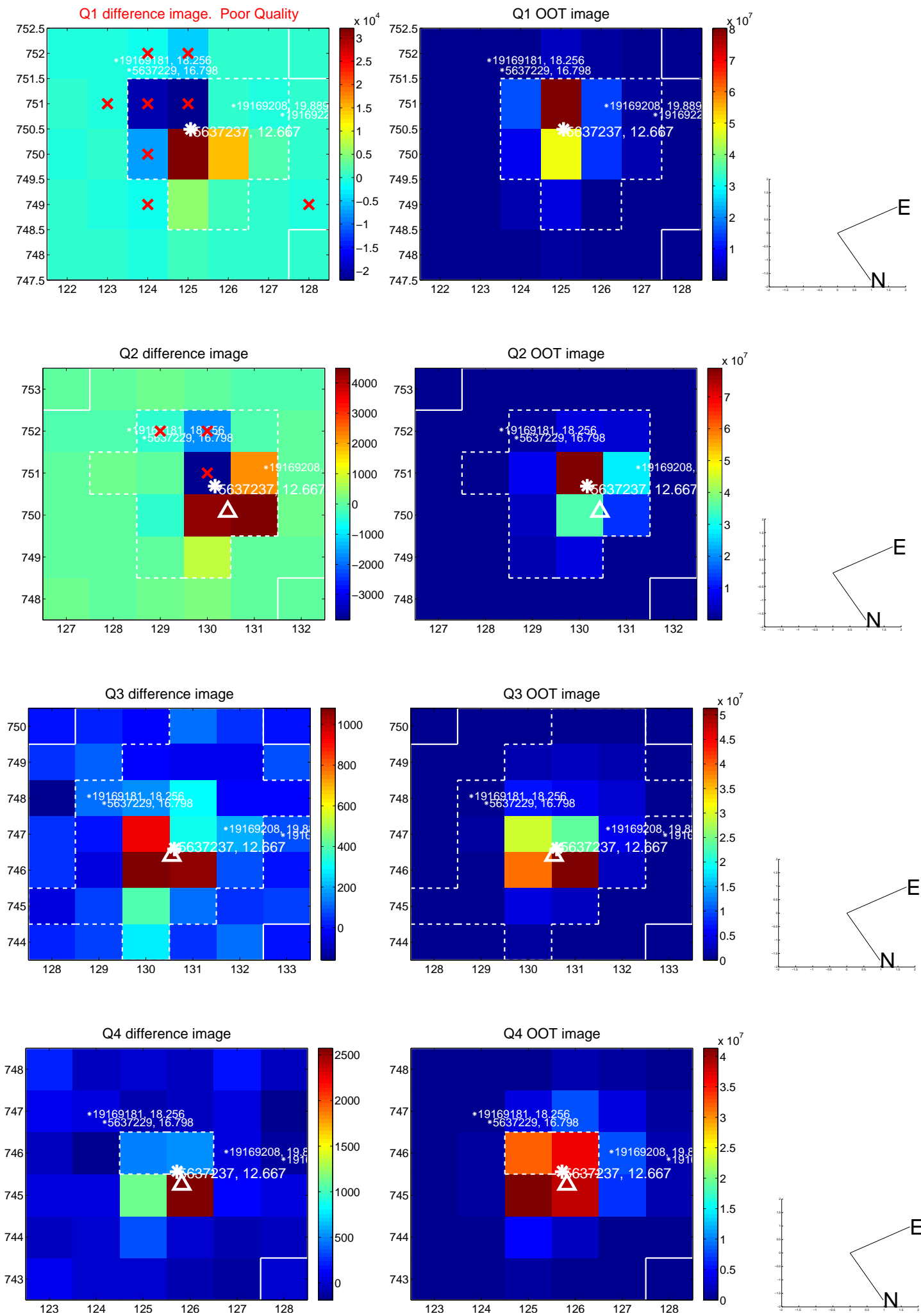
The direct PRF centroid is offset from the target star catalog position by about 0.03 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.880 ± 0.413	2.13	-0.368 ± 0.268	0.800 ± 0.392
PRF-fit source offset from KIC position	0.961 ± 0.408	2.36	-0.393 ± 0.235	0.878 ± 0.403
photometric centroid source offset	2.07 ± 0.87	2.36	1.06 ± 0.90	1.78 ± 0.87

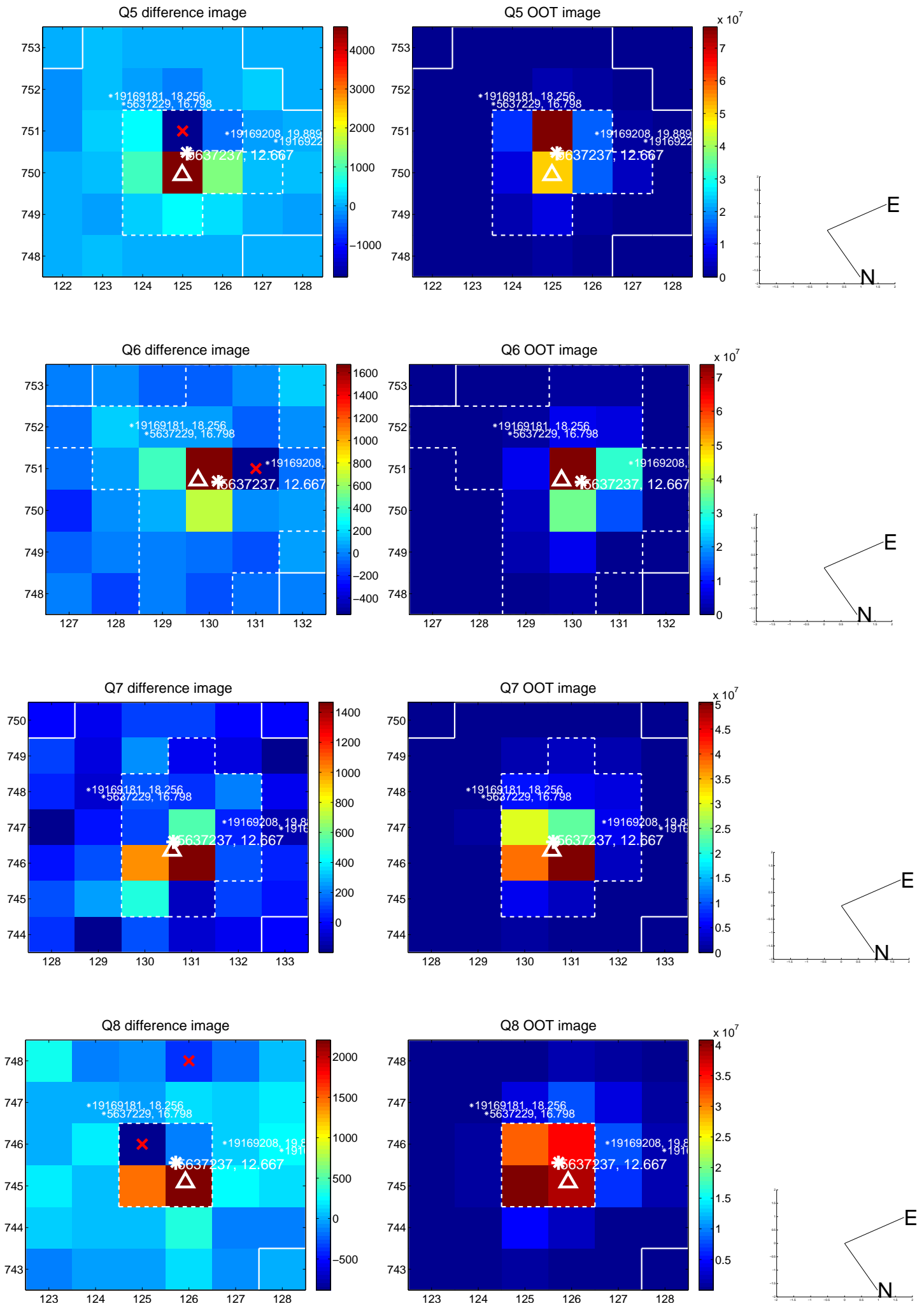


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

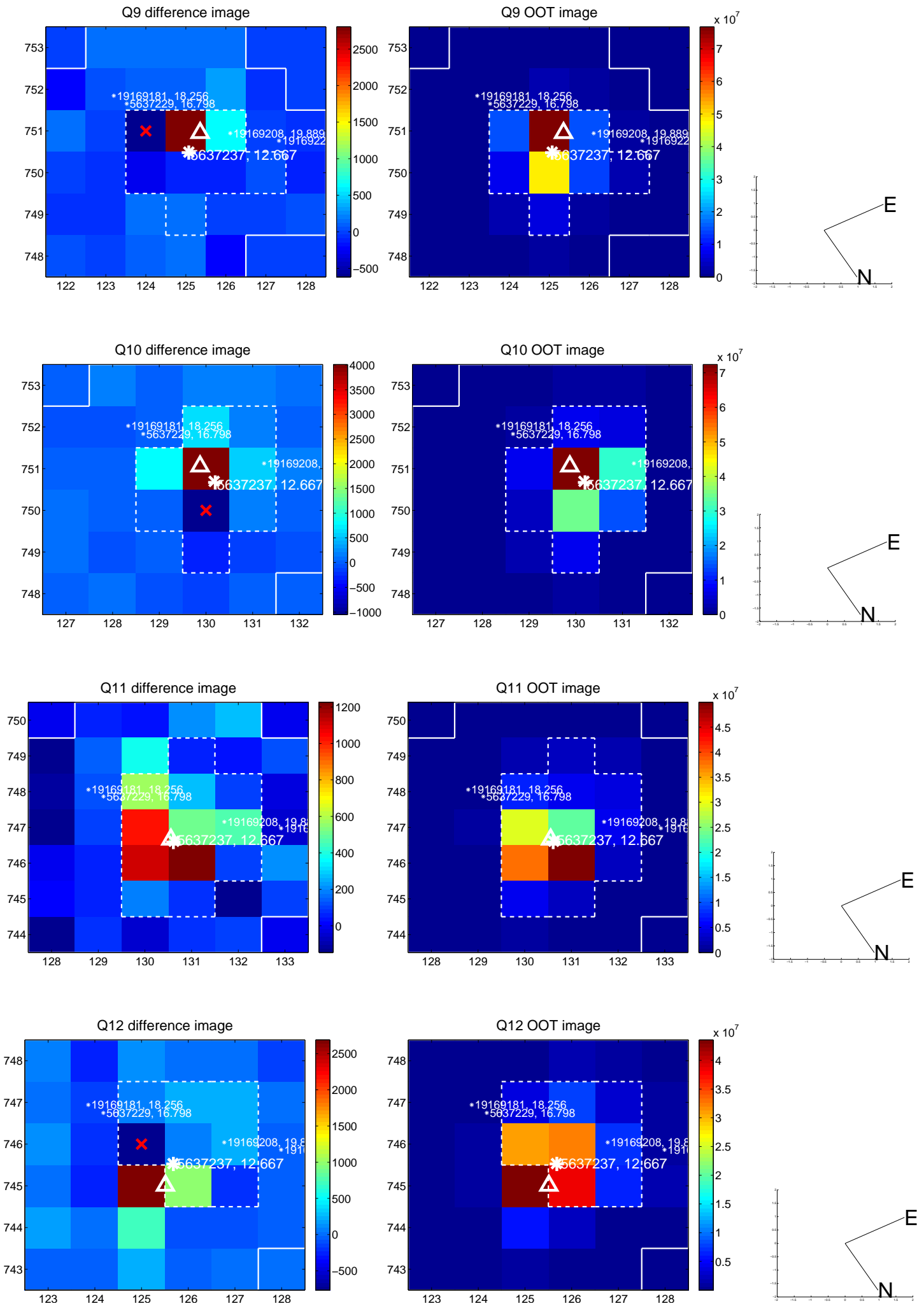
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



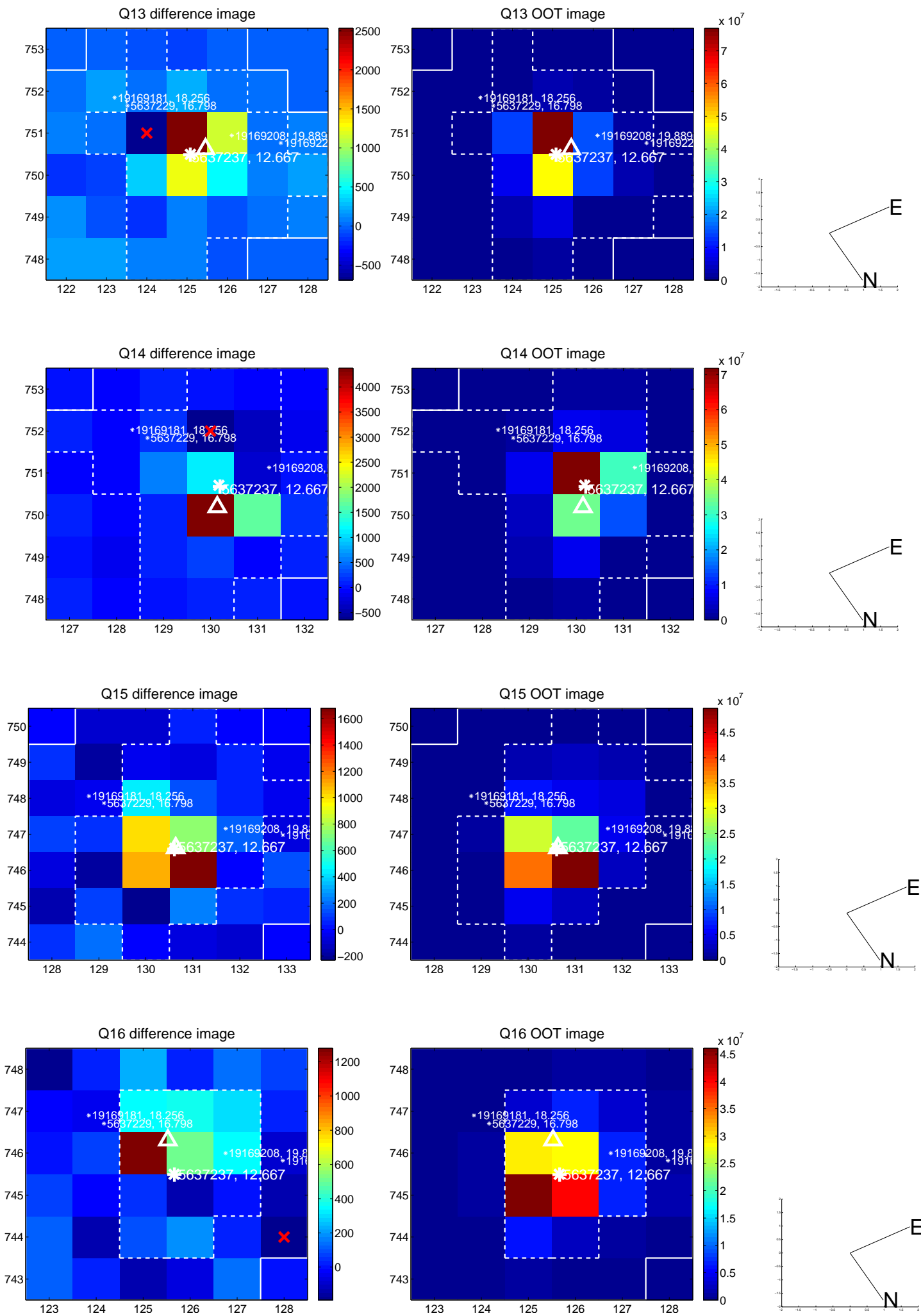
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



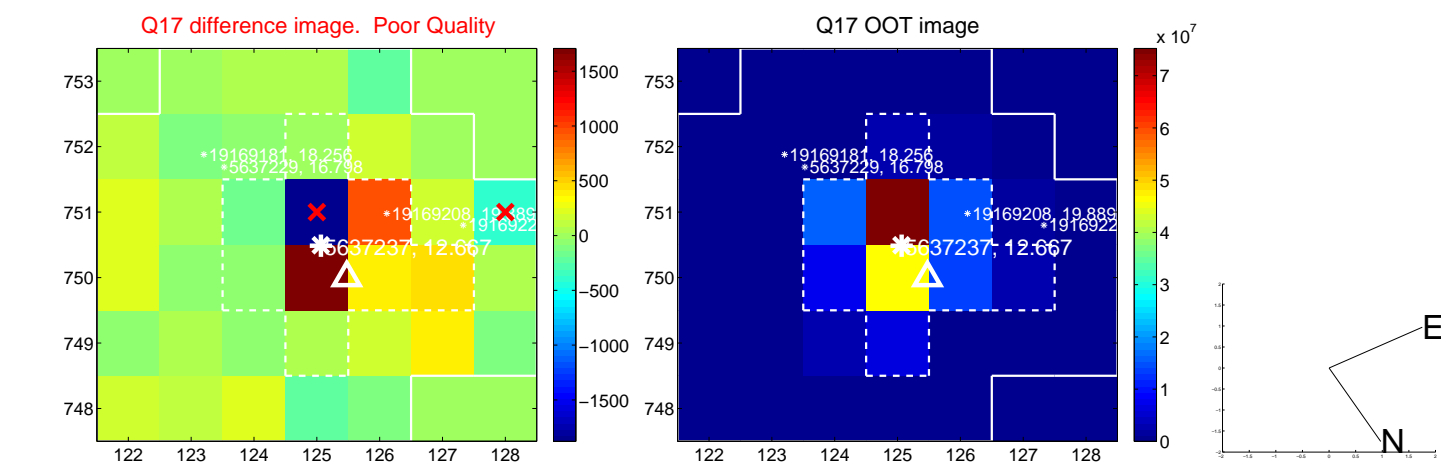
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



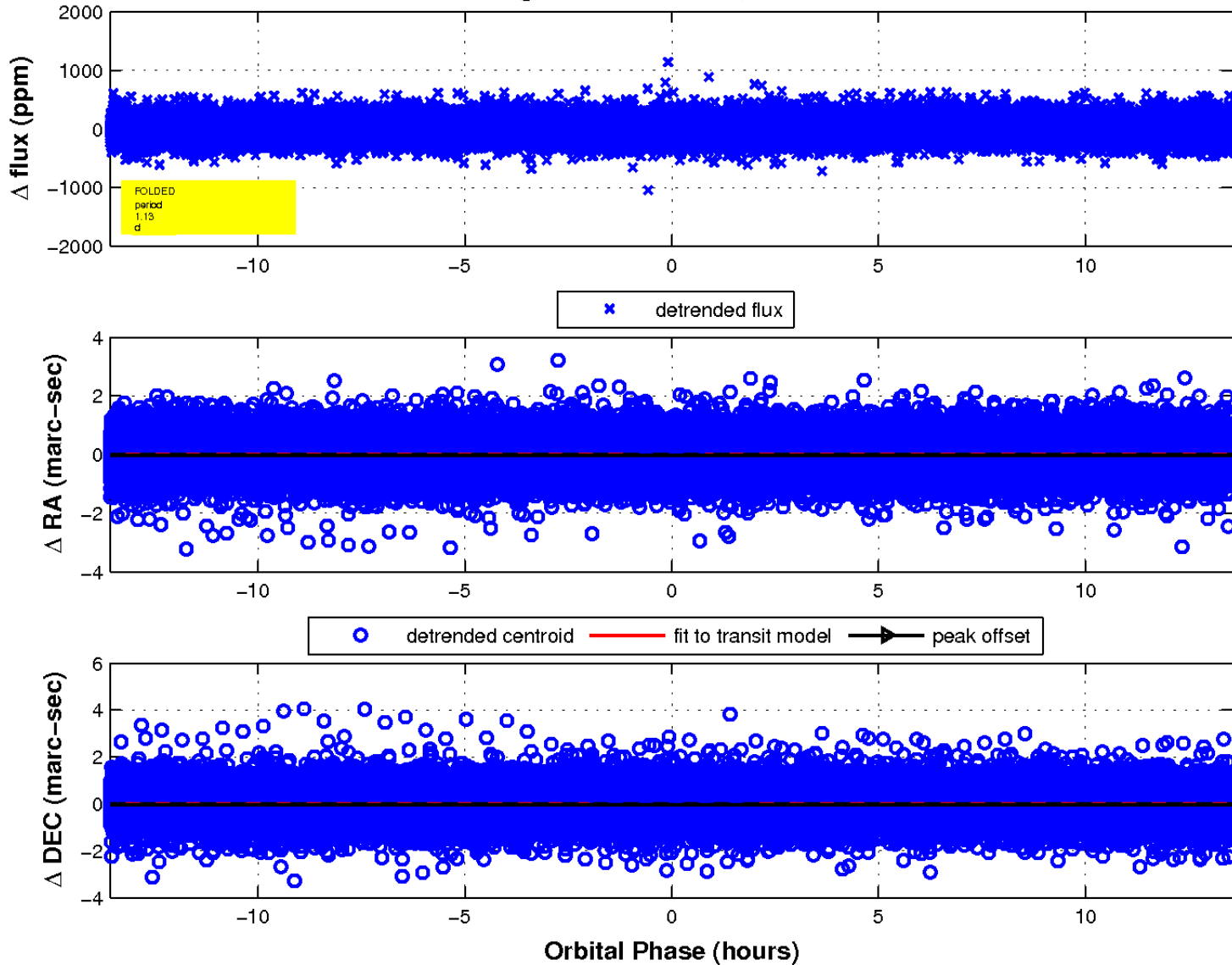
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

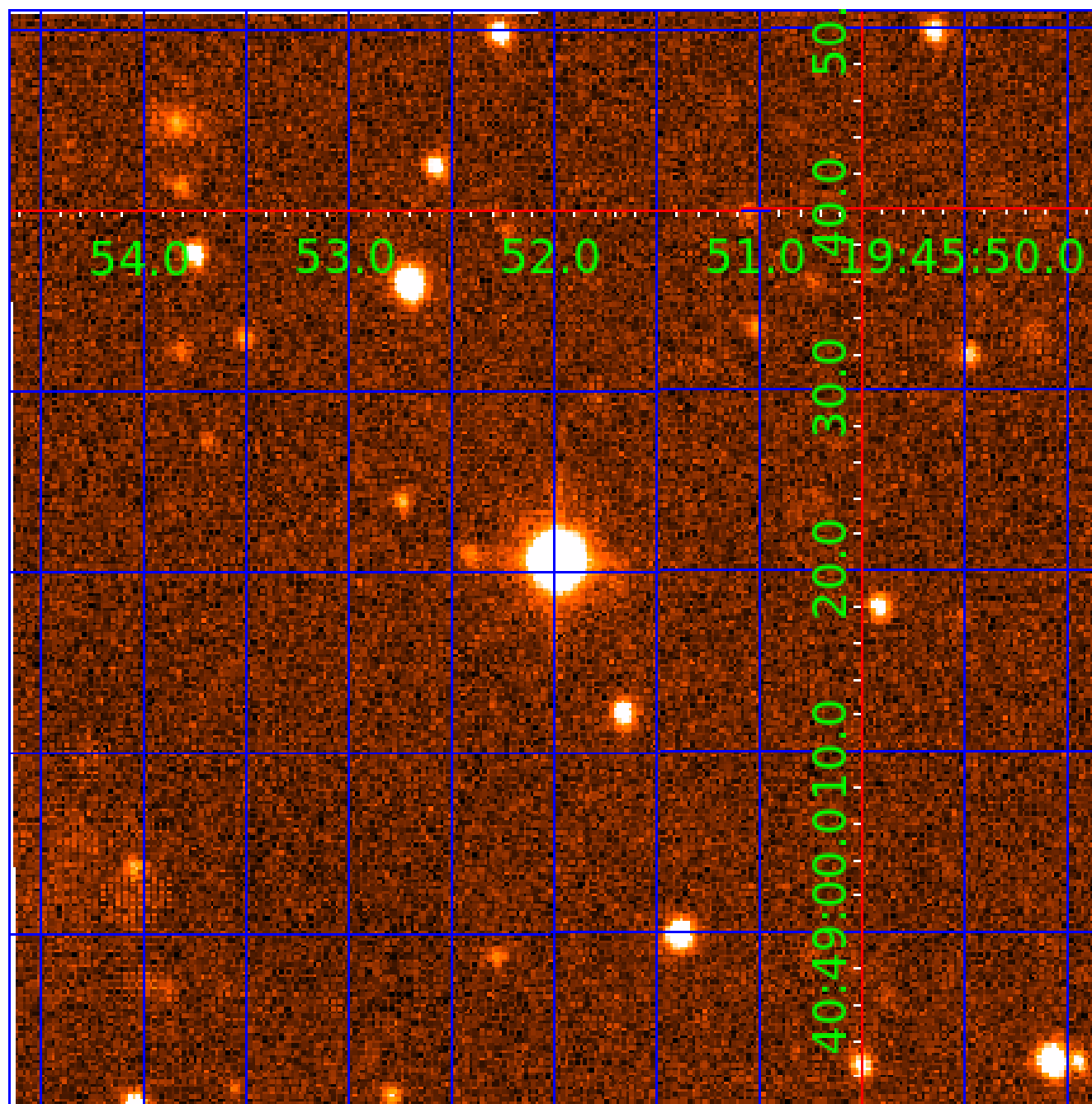


fluxWeightedCentroids, Planet 1 of 2



UKIRT Image

Declination



KIC 005637237

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})
005637237-01	OBS	No	1.130667	132.355047	14.8	5.369	8.3	9.4	2.27	7498	0.90	22460.70
005637237-02	OBS	No	148.746639	274.812227	289.1	3.416	8.0	8.0	2.27	7498	4.48	33.57

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005637237-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT
005637237-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS

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

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

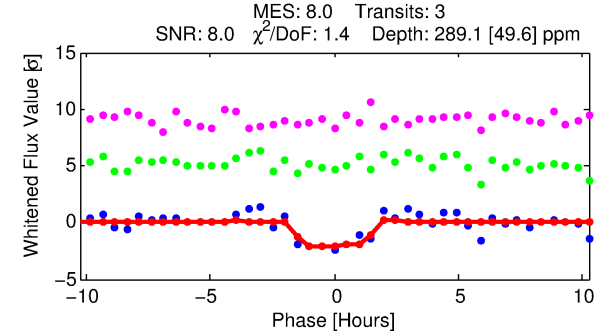
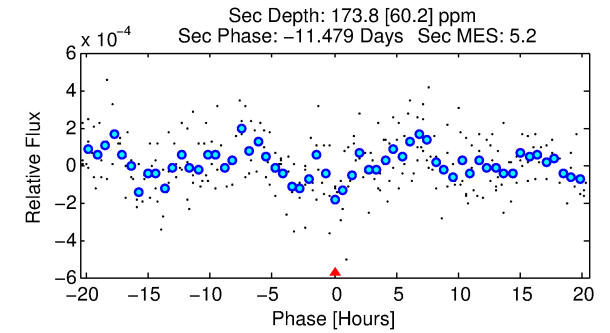
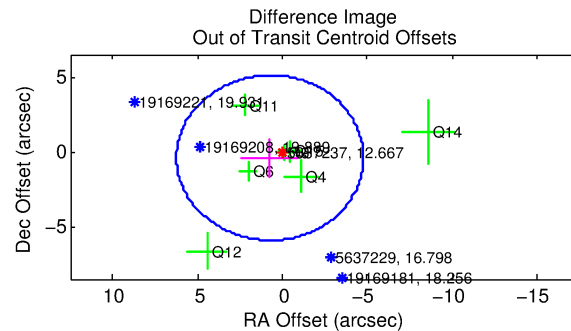
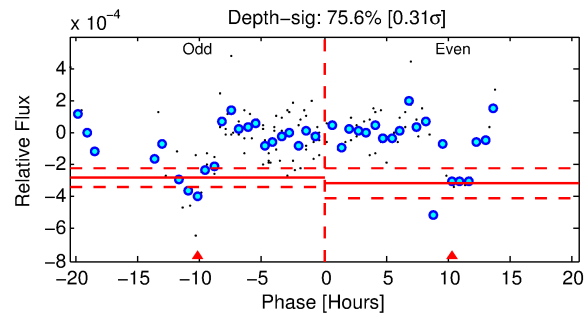
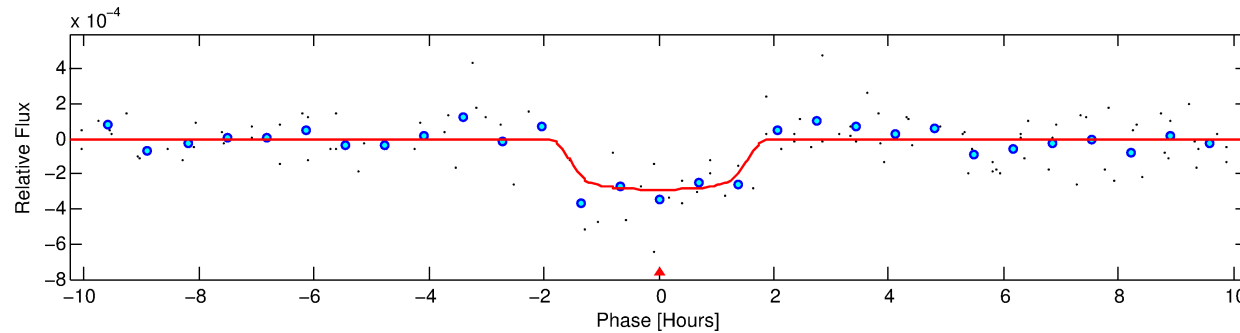
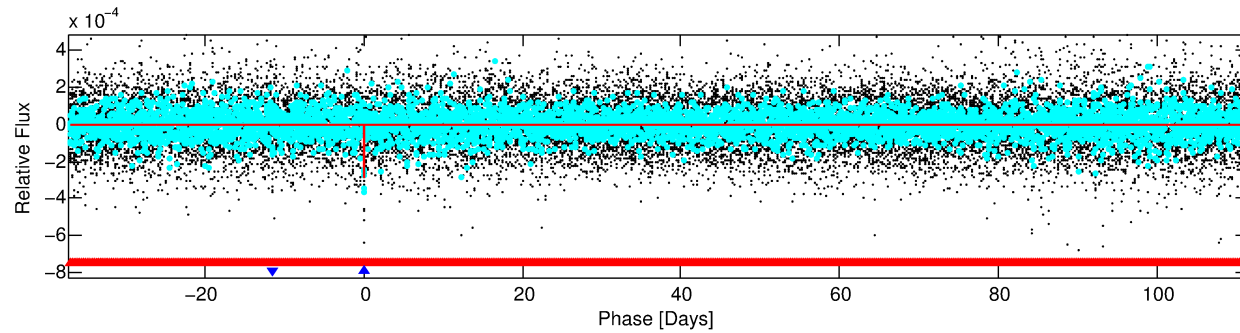
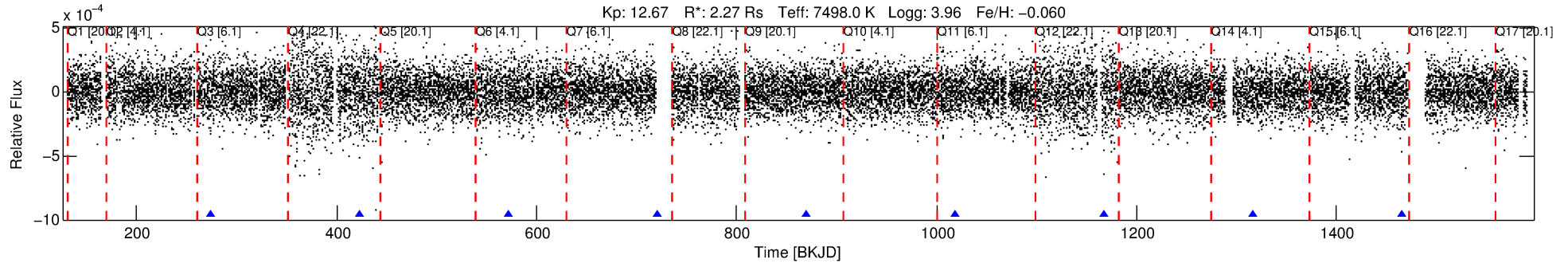
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005637237-02

No Significant Match Found

DV One-Page Summary

KIC: 5637237 Candidate: 2 of 2 Period: 148.747 d



DV Fit Results:

Period = 148.74664 [0.00222] d
Epoch = 274.8122 [0.0152] BKJD
Rp/R* = 0.0180 [0.0077]
a/R* = 157.85 [435.10]
b = 0.90 [0.58]
Seff = 33.57 [14.63]
Teff = 614 [67] K
Rp = 4.48 [2.34] Re
a = 0.6605 [0.1749] AU
Ag = 2080.74 [2101.11] [0.99σ]
Teffp = 6409 [1508] K [3.84σ]

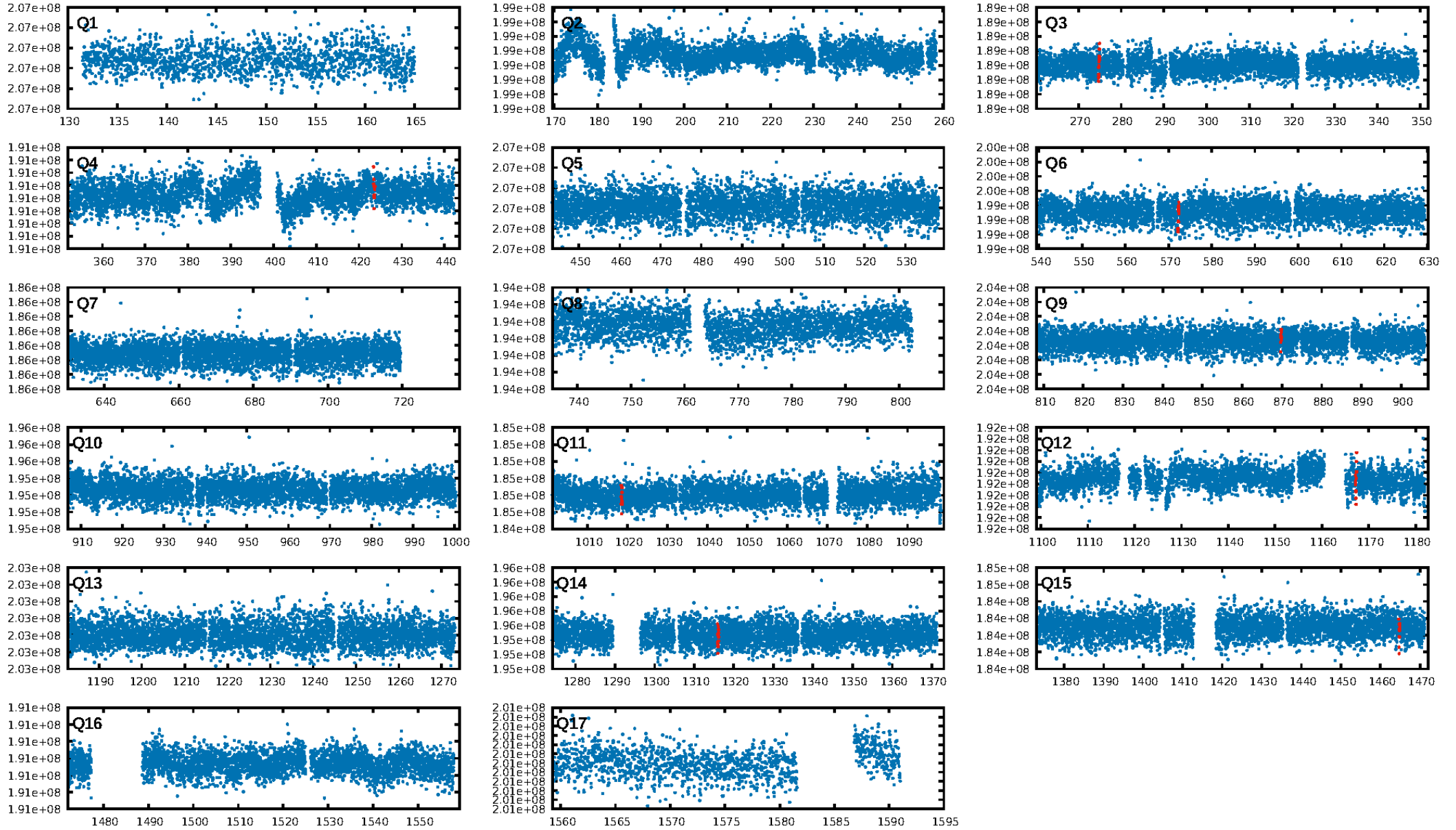
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [556.72σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 27.0%
ModelChiSquareGof-sig: 51.6%
Bootstrap-pfa: 2.90e-10
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 3.451
Centroid-sig: 2.8%
Centroid-so: 1.090 arcsec [1.55σ]
OotOffset-rm: 0.829 arcsec [0.45σ]
OotOffset-st: 2/2/2/1 [7]
KicOffset-rm: 0.778 arcsec [0.47σ]
KicOffset-st: 2/2/2/1 [7]
DiffImageQuality-fgm: 0.29 [2/7]
DiffImageOverlap-fno: 0.25 [2/8]

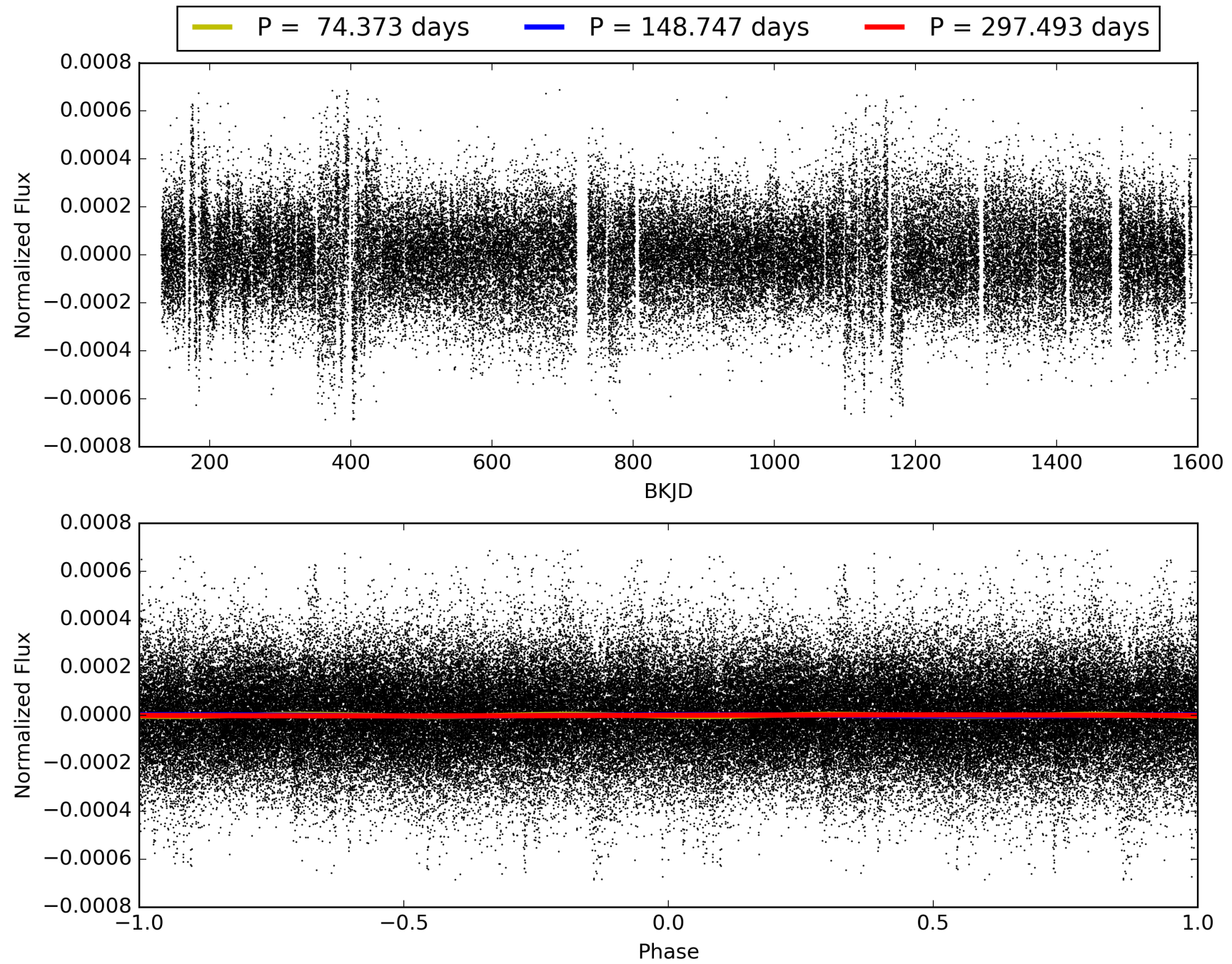
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 17:52:46 Z

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

TCE 005637237-02, PDC Light Curves

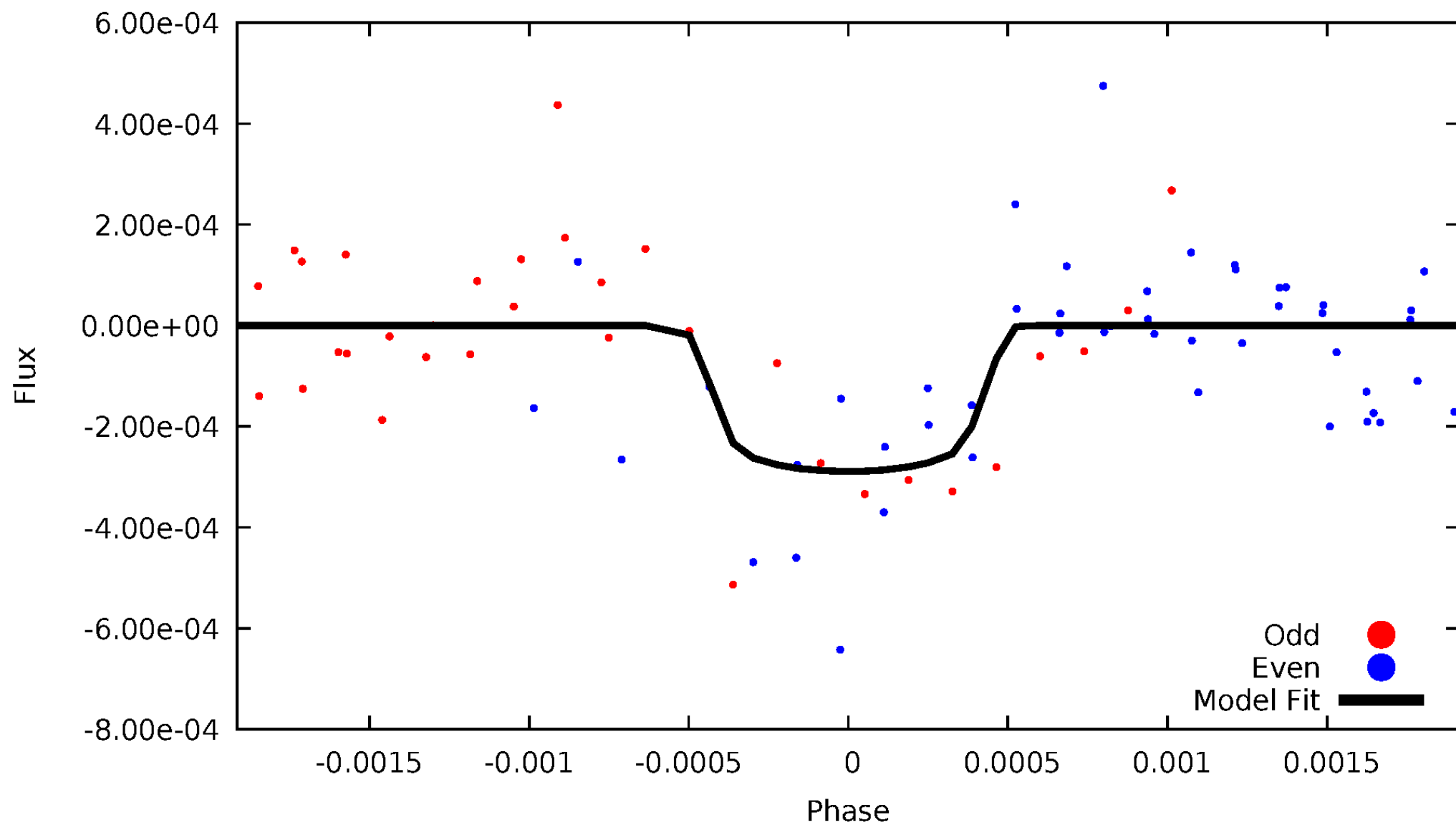


TCE 005637237-02



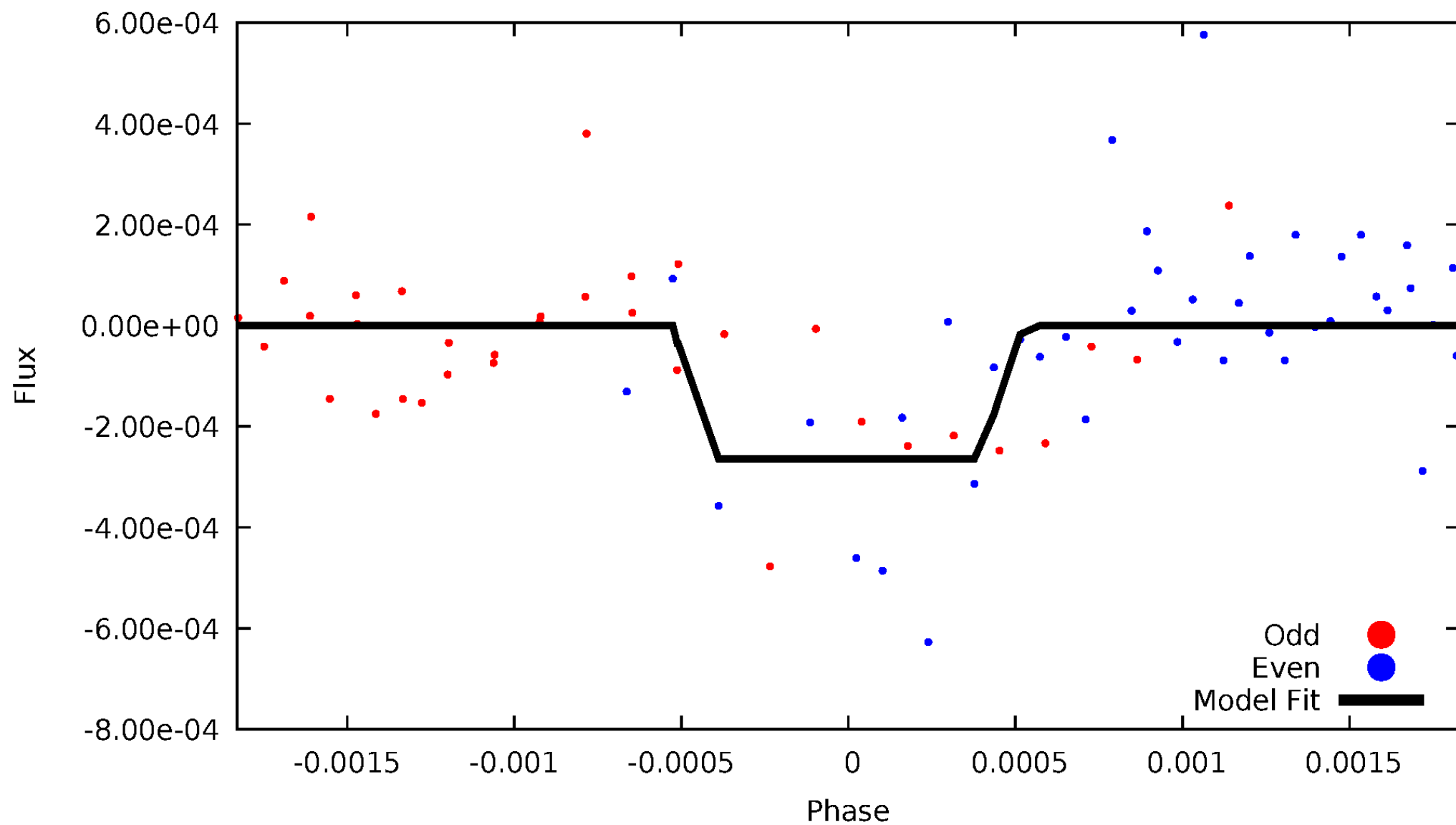
DV Odd/Even

TCE 005637237-02



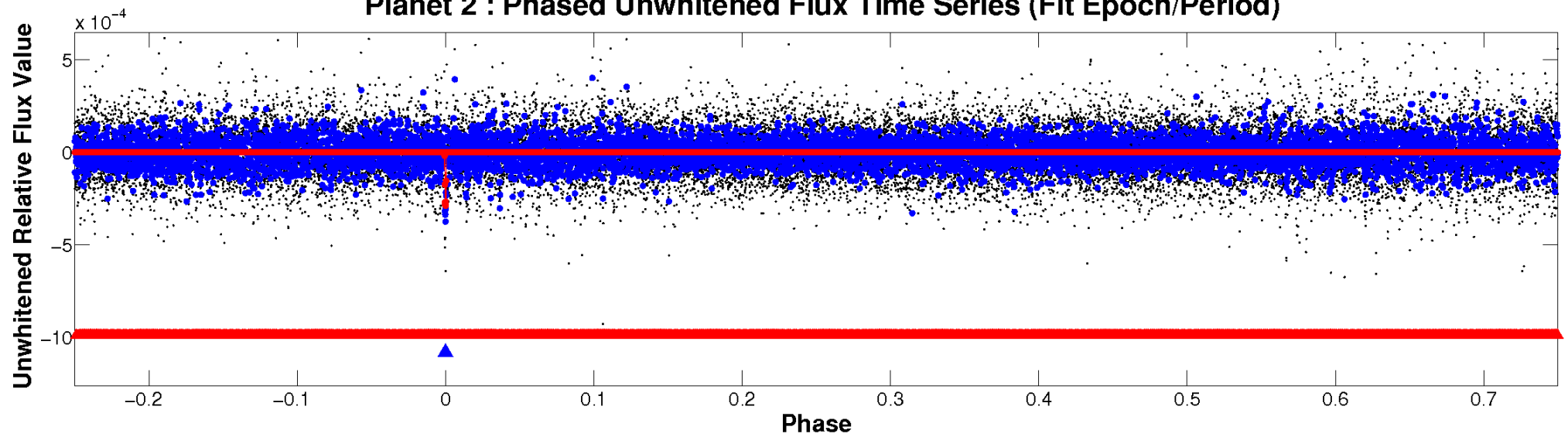
ALT Odd/Even

TCE 005637237-02

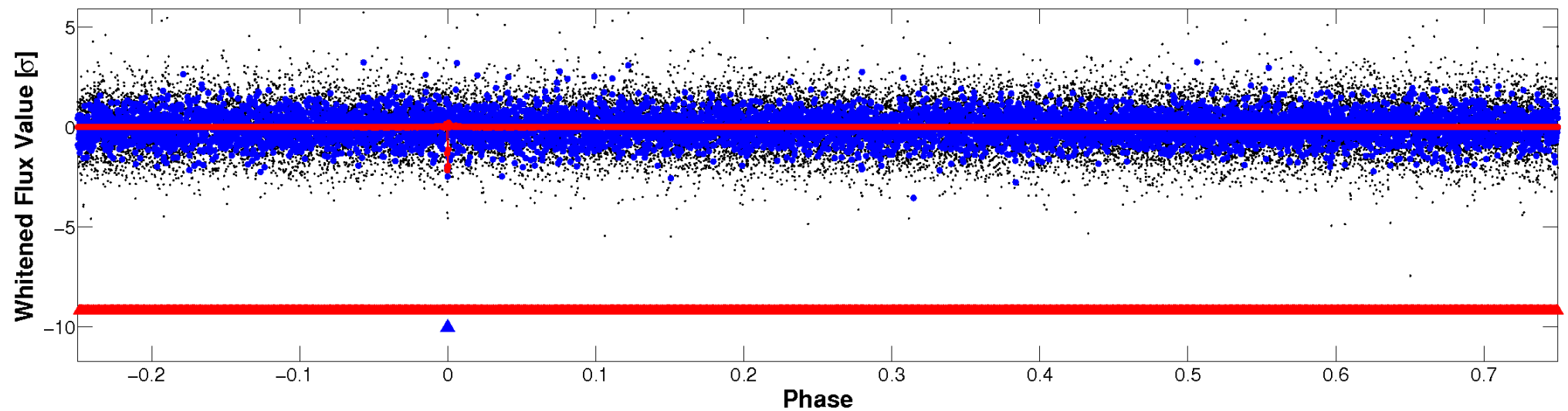


Non-Whitened Vs. Whitened Light Curve

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

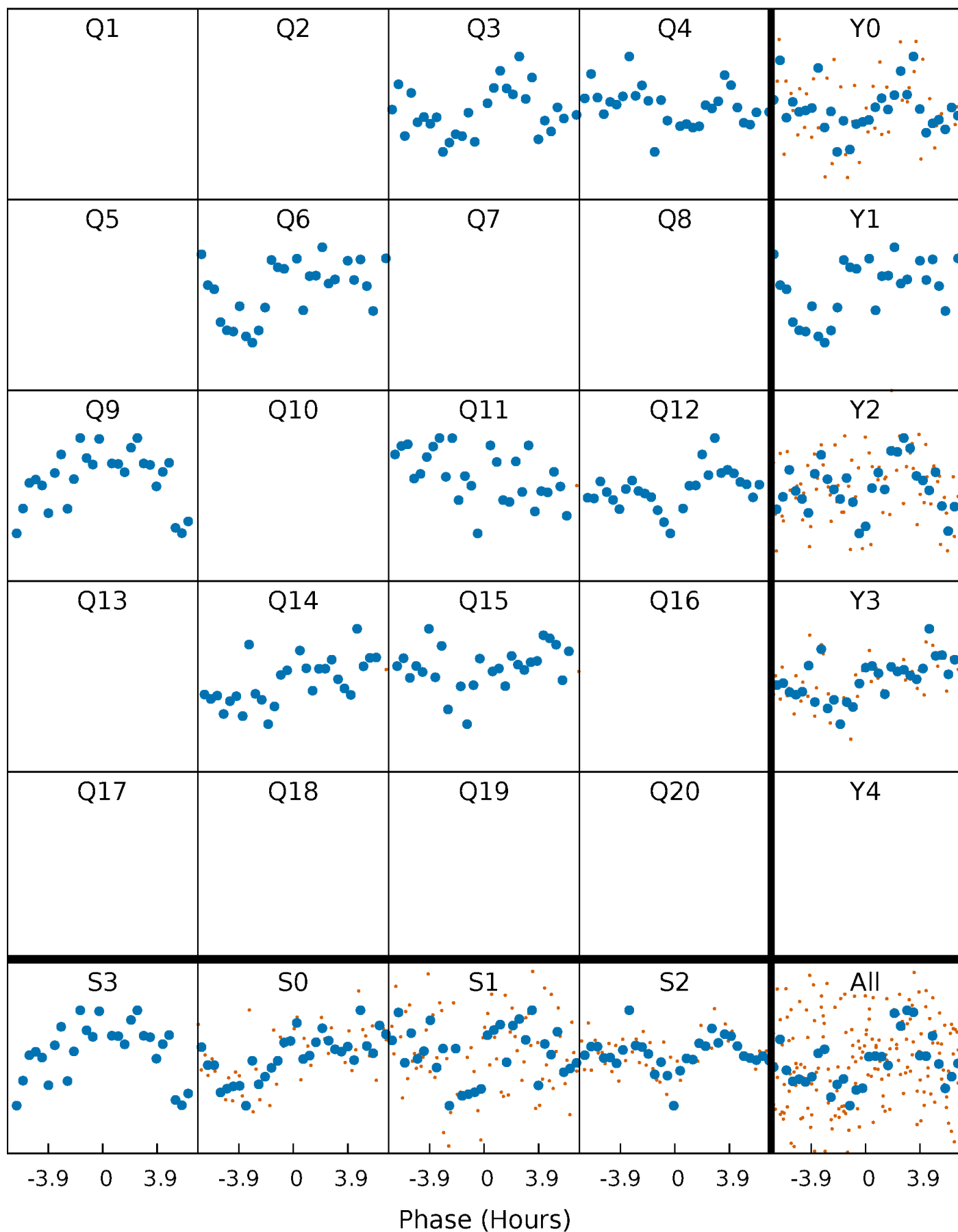


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



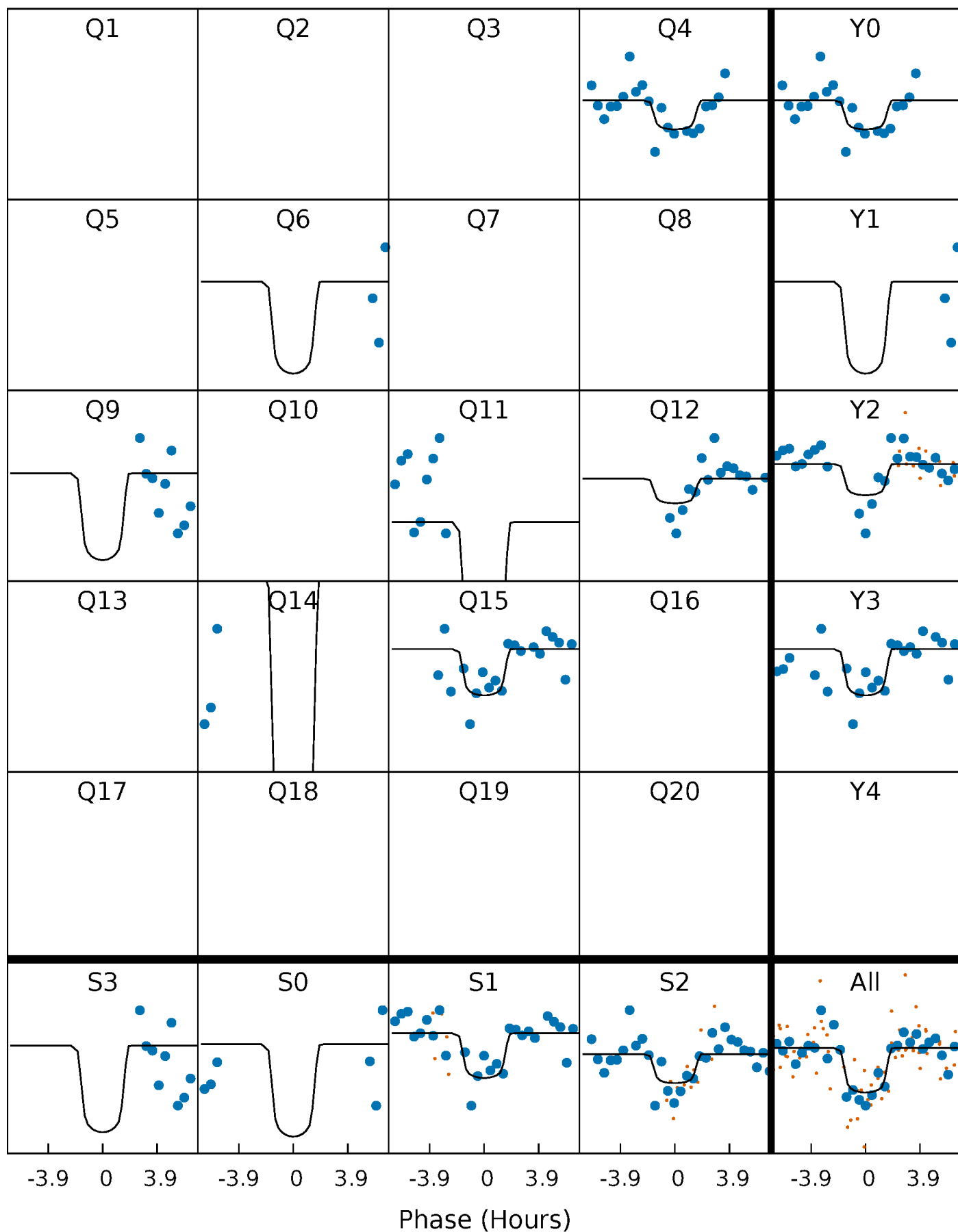
PDC Quarter-Phased Transit Curves

TCE 005637237-02 P=148.746638 Days $T_0=274.812227$ (BKJD)



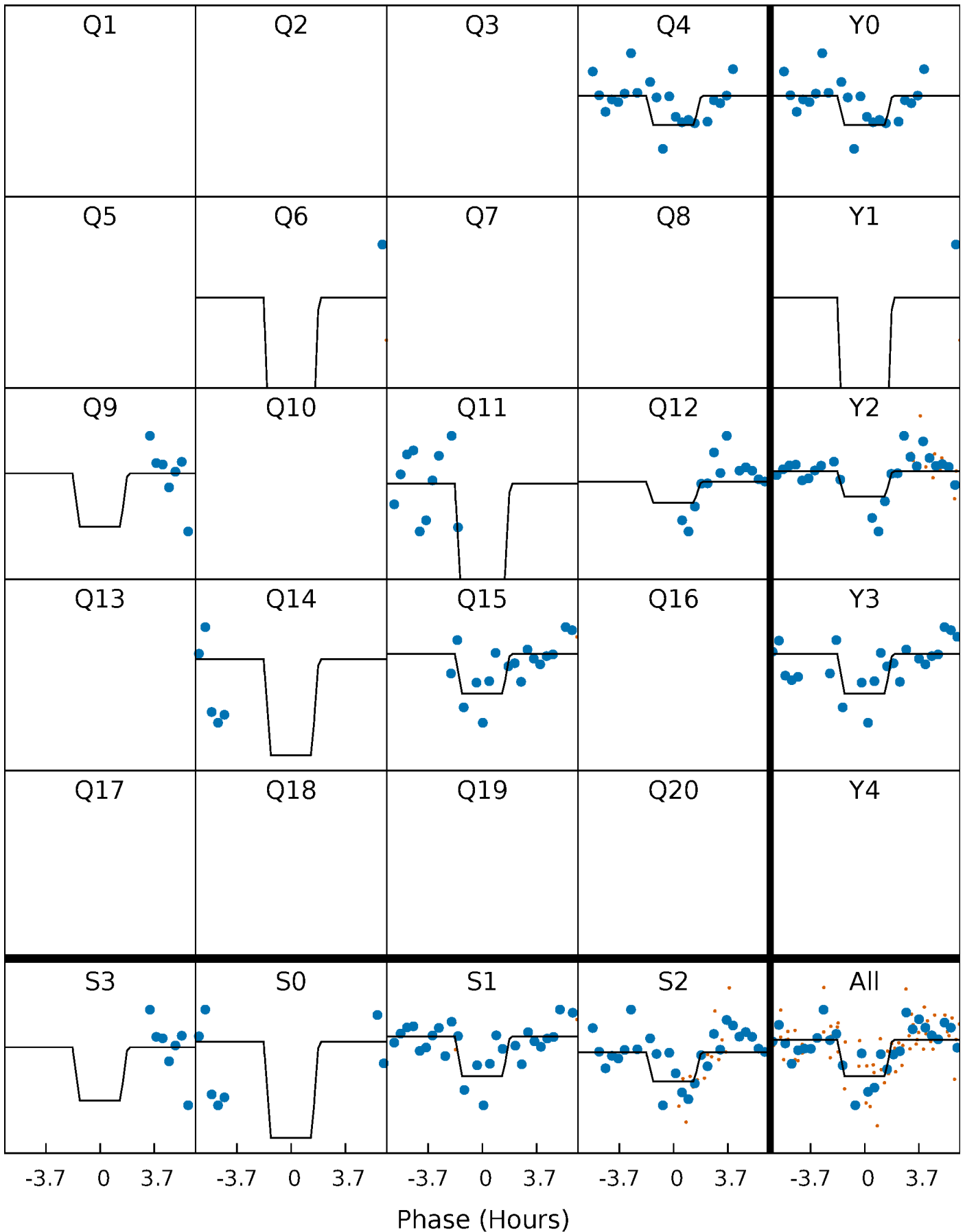
DV Quarter-Phased Transit Curves

TCE 005637237-02 P=148.746638 Days $T_0=274.812227$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

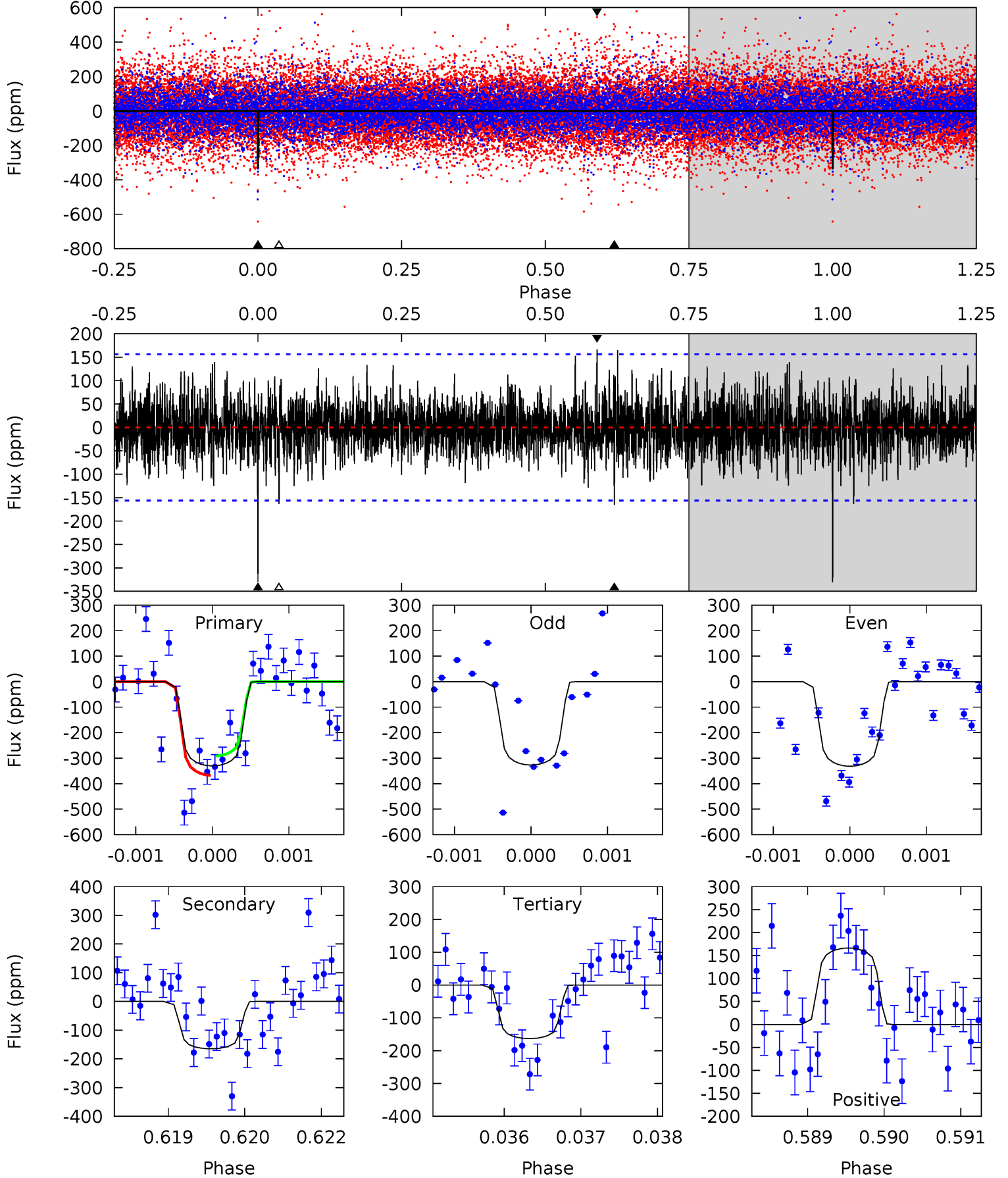
TCE 005637237-02 P=148.742500 Days $T_0=274.797544$ (BKJD)



DV Model-Shift Uniqueness Test

005637237-02, P = 148.746638 Days, E = 126.065589 Days

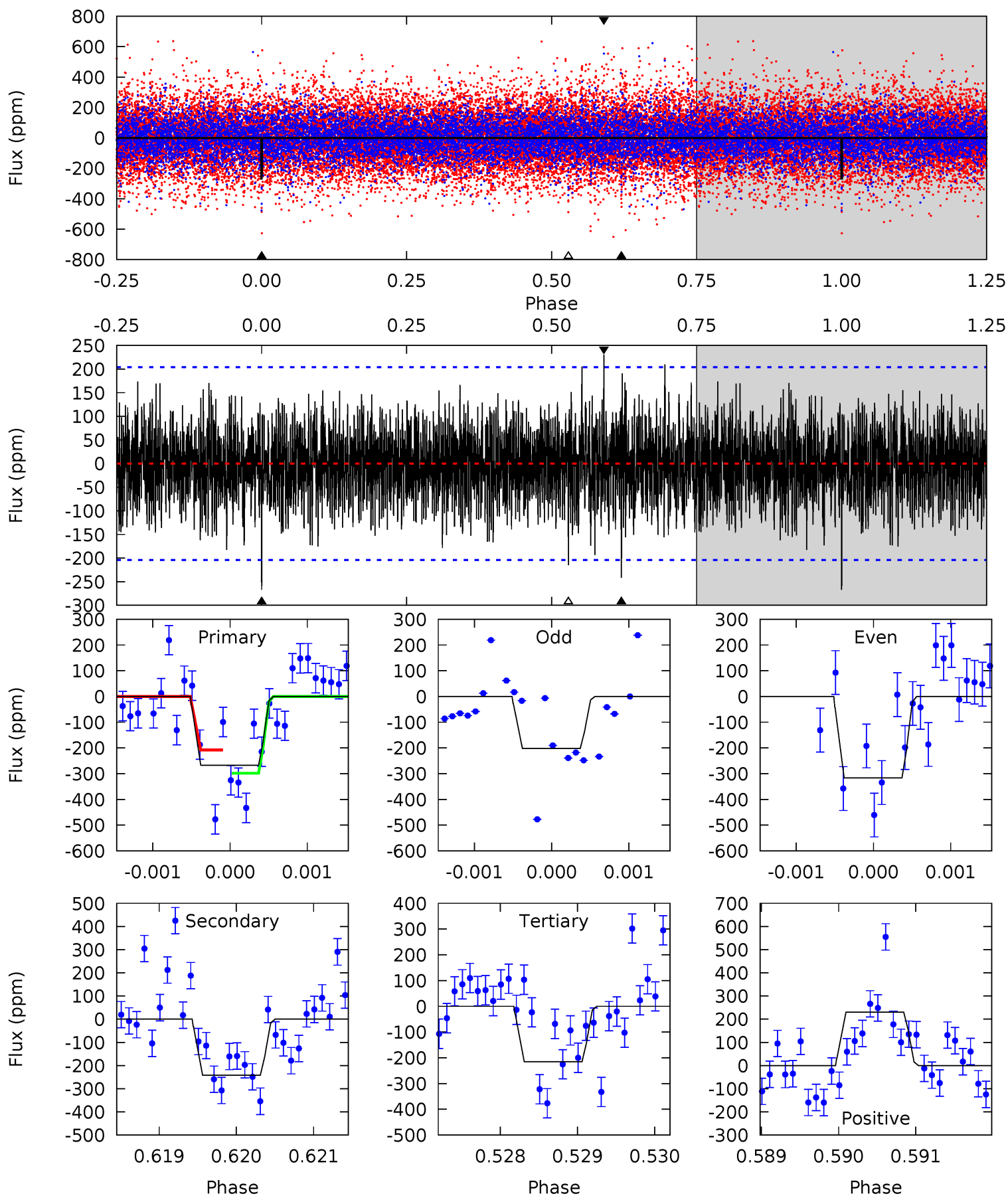
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.5	5.74	5.69	5.79	5.45	3.28	1.41	5.82	5.71	0.06	-0.05	0.08	1.02	0.34	1.28



Alt Model-Shift Uniqueness Test

005637237-02, P = 148.742500 Days, E = 126.055044 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.13	6.44	5.74	6.14	5.45	3.28	1.65	1.39	0.99	0.70	0.30	1.54	1.32	0.46	1.10



Stellar Parameters For KIC 005637237

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7498^{+209}_{-314}	$3.964^{+0.228}_{-0.152}$	$-0.060^{+0.200}_{-0.350}$	$2.274^{+0.555}_{-0.678}$	$1.735^{+0.185}_{-0.317}$	$0.208^{+0.290}_{-0.093}$
	+3%/-4%	+6%/-4%	+333%/-583%	+24%/-30%	+11%/-18%	+140%/-45%
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 005637237-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-165 ± 29	$4.24^{+2.19}_{-1.73}$	854^{+62}_{-72}	6249^{+2205}_{-1036}	2132^{+4100}_{-1211}
Alt.	-241 ± 37	$3.80^{+2.07}_{-1.69}$	849^{+63}_{-66}	7352^{+3499}_{-1445}	3898^{+8864}_{-2293}

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

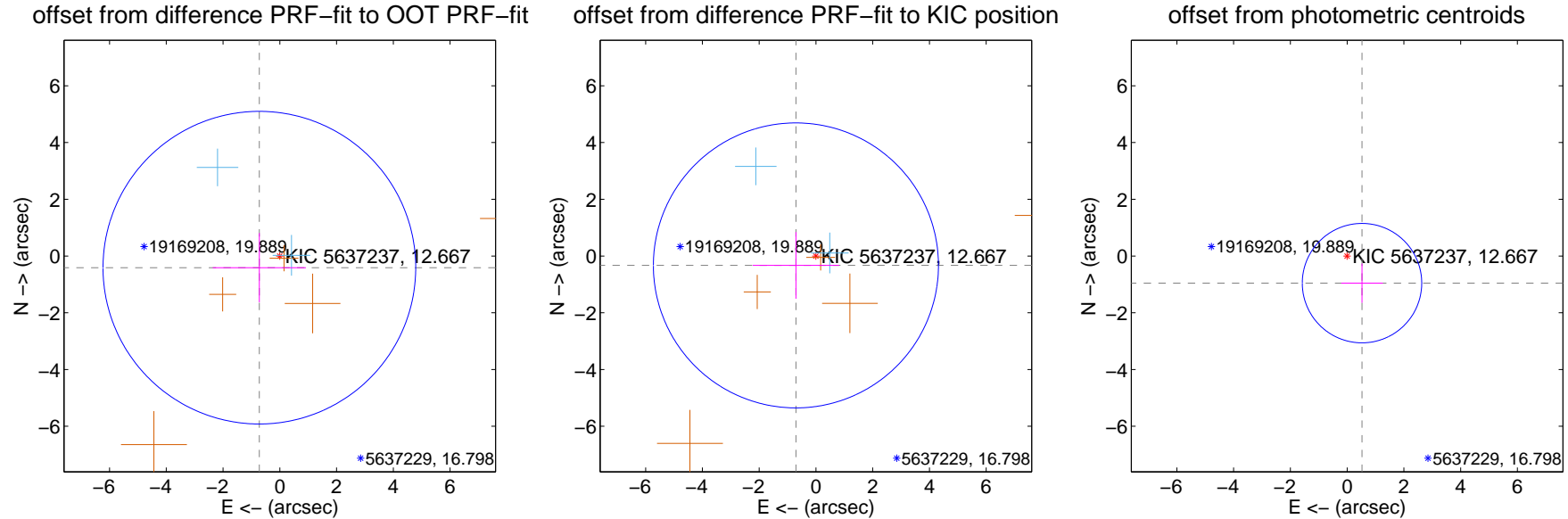
DV Centroid Data

Supplemental centroid analysis for 005637237-02. Kepler magnitude: 12.67. Transit SNR 8.05

There are 2 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.829 ± 1.836	0.45	0.720 ± 1.641	-0.411 ± 1.218
PRF-fit source offset from KIC position	0.778 ± 1.674	0.47	0.705 ± 1.522	-0.331 ± 1.176
photometric centroid source offset	1.09 ± 0.70	1.55	-0.52 ± 0.73	-0.96 ± 0.69



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.

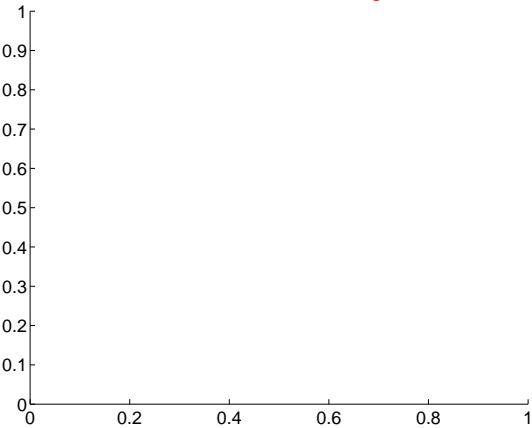
Q1 no difference image



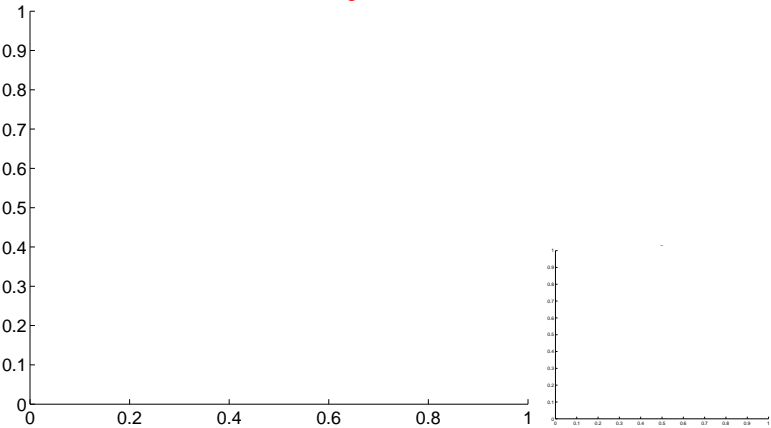
Q1 no OOT image



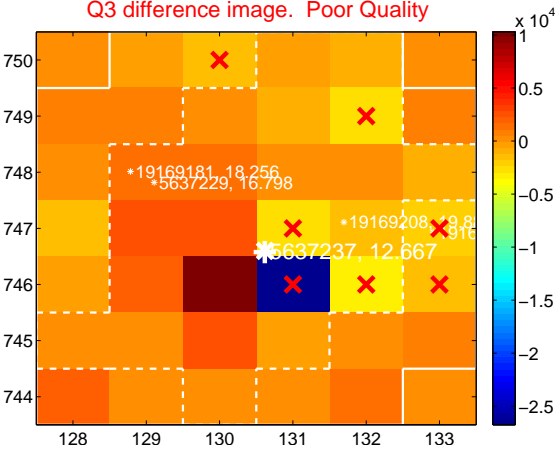
Q2 no difference image



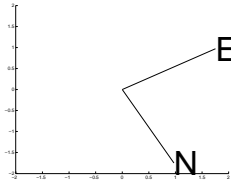
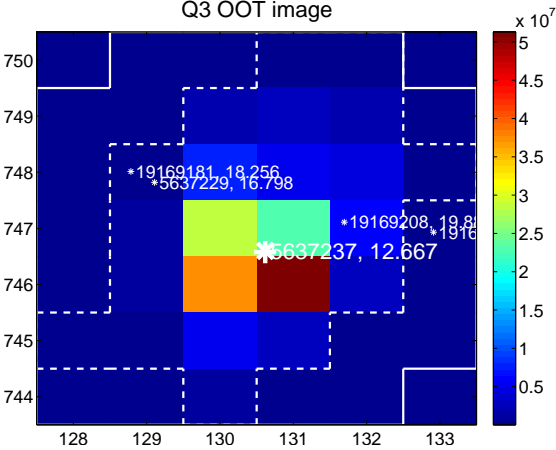
Q2 no OOT image



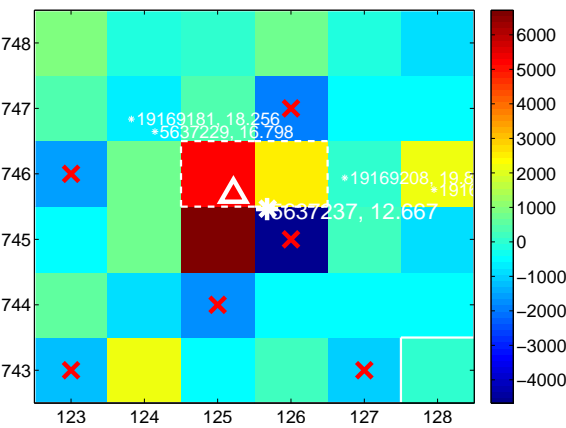
Q3 difference image. Poor Quality



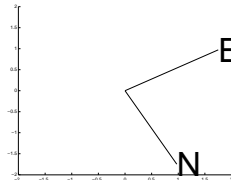
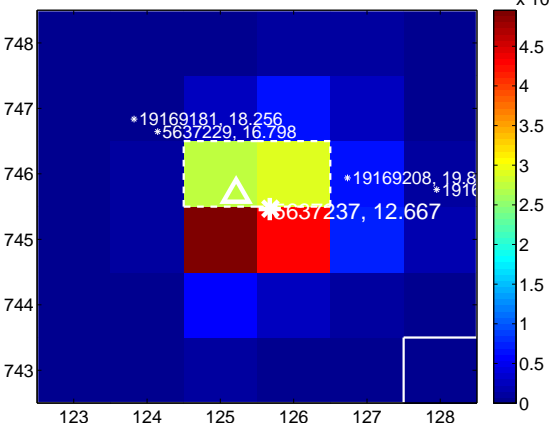
Q3 OOT image



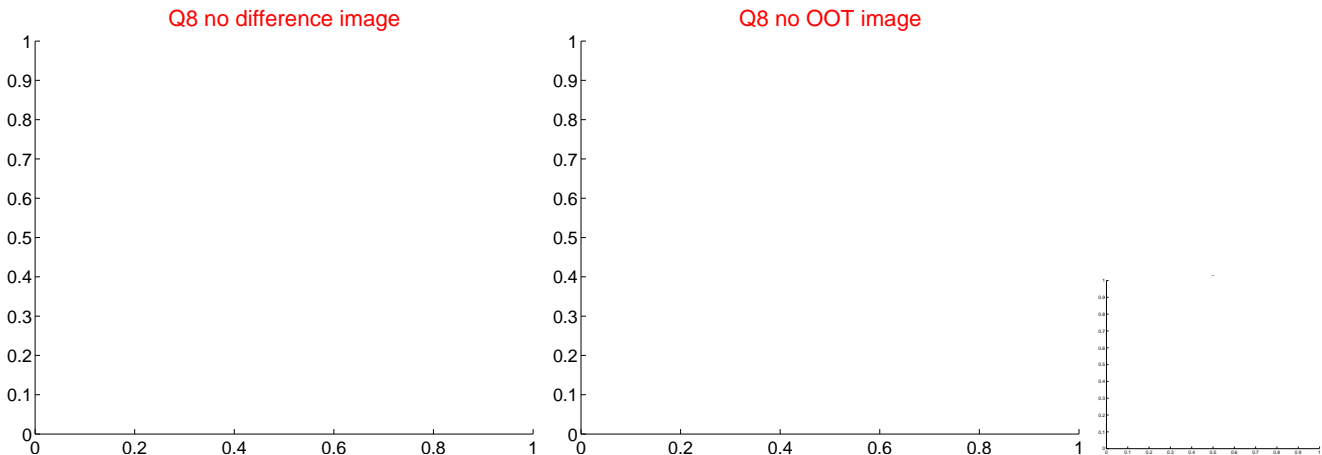
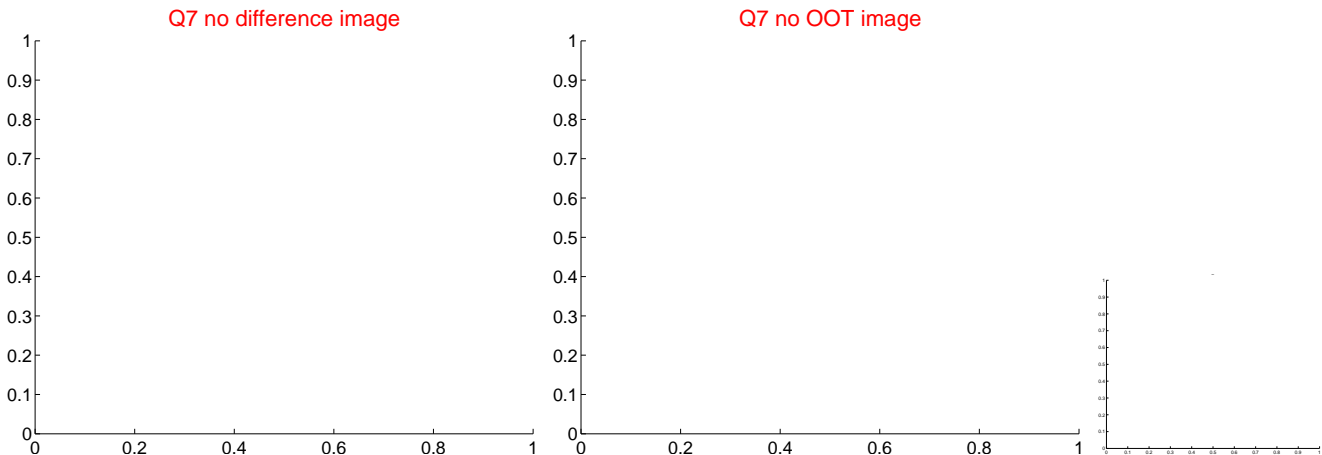
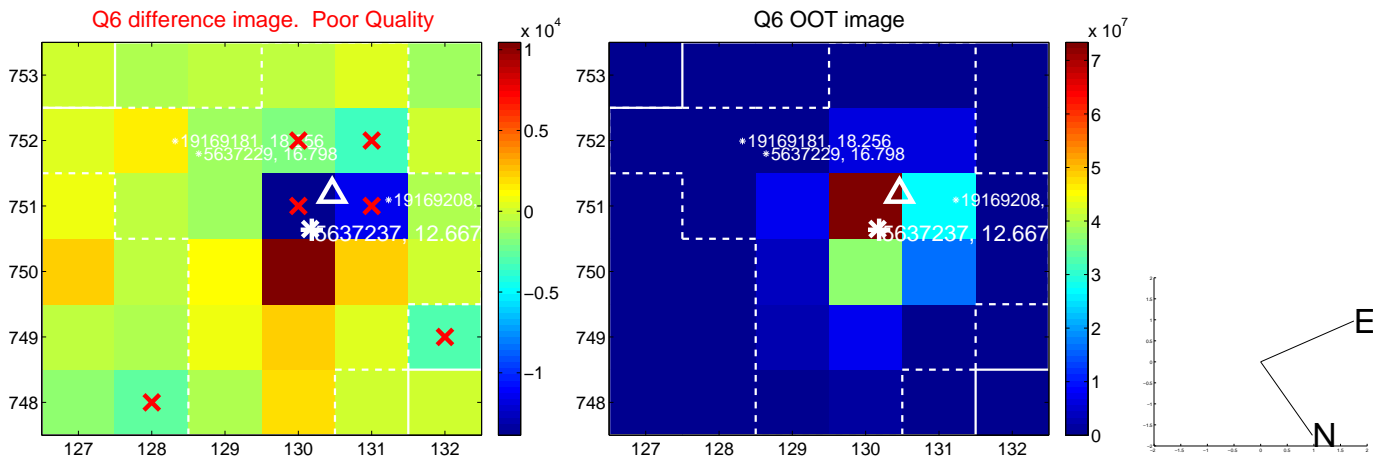
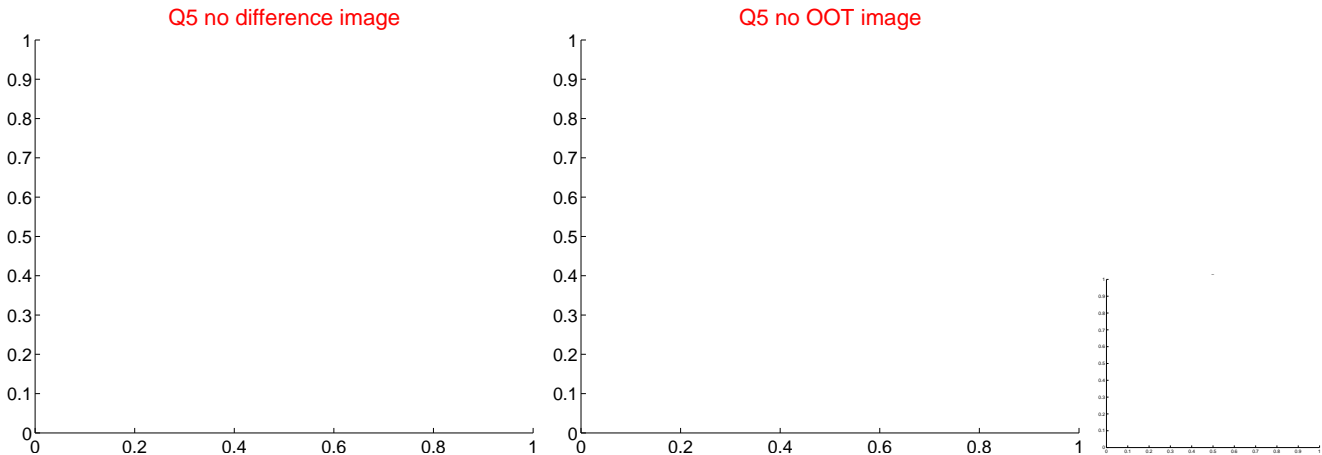
Q4 difference image. Poor Quality



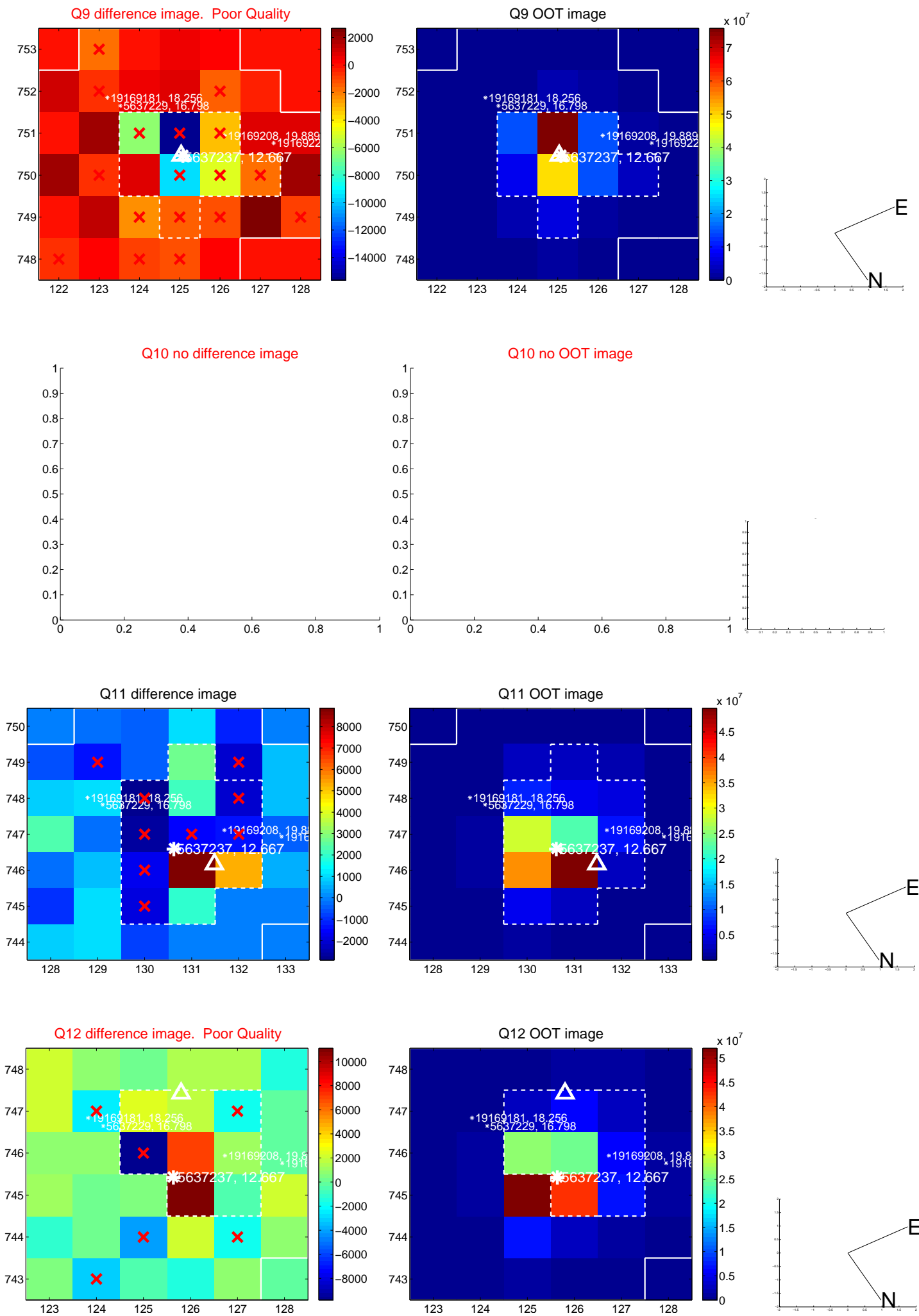
Q4 OOT image



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.



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

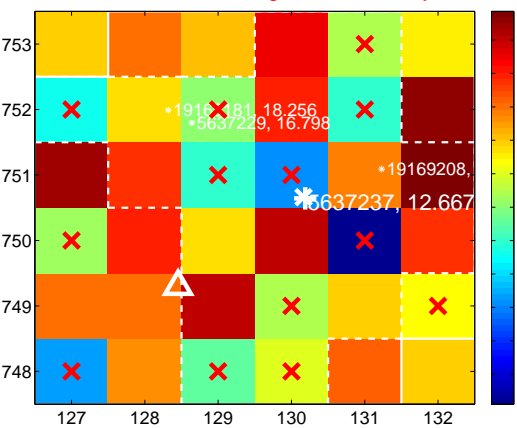
Q13 no difference image



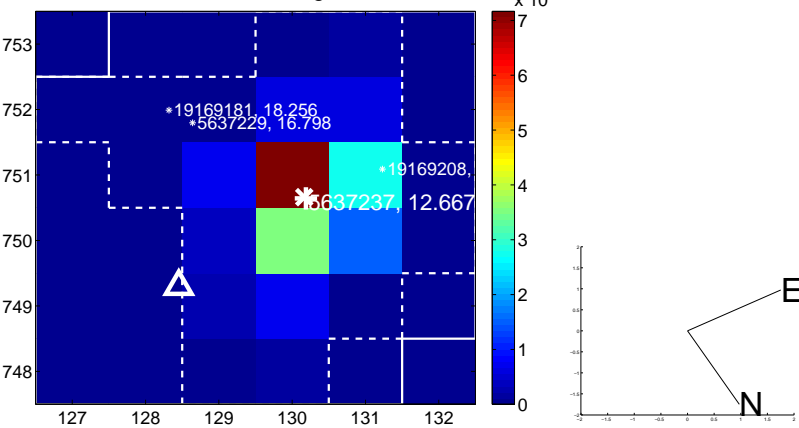
Q13 no OOT image



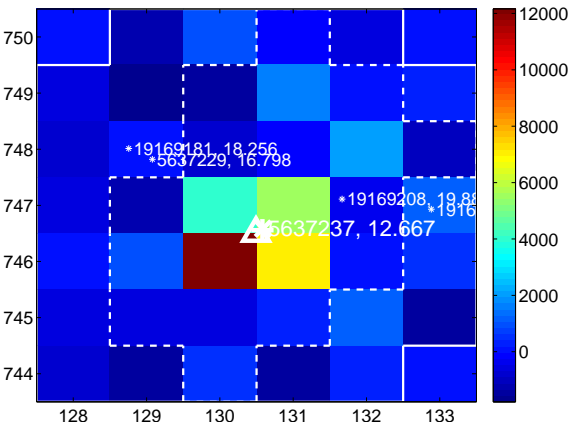
Q14 difference image. Poor Quality



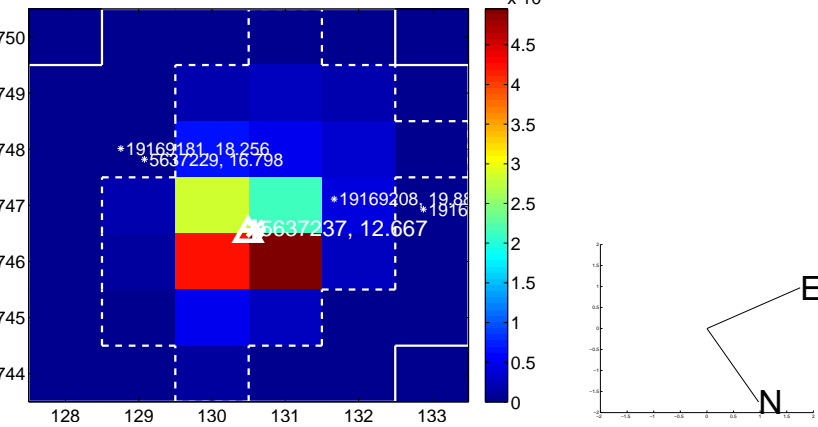
Q14 OOT image



Q15 difference image



Q15 OOT image



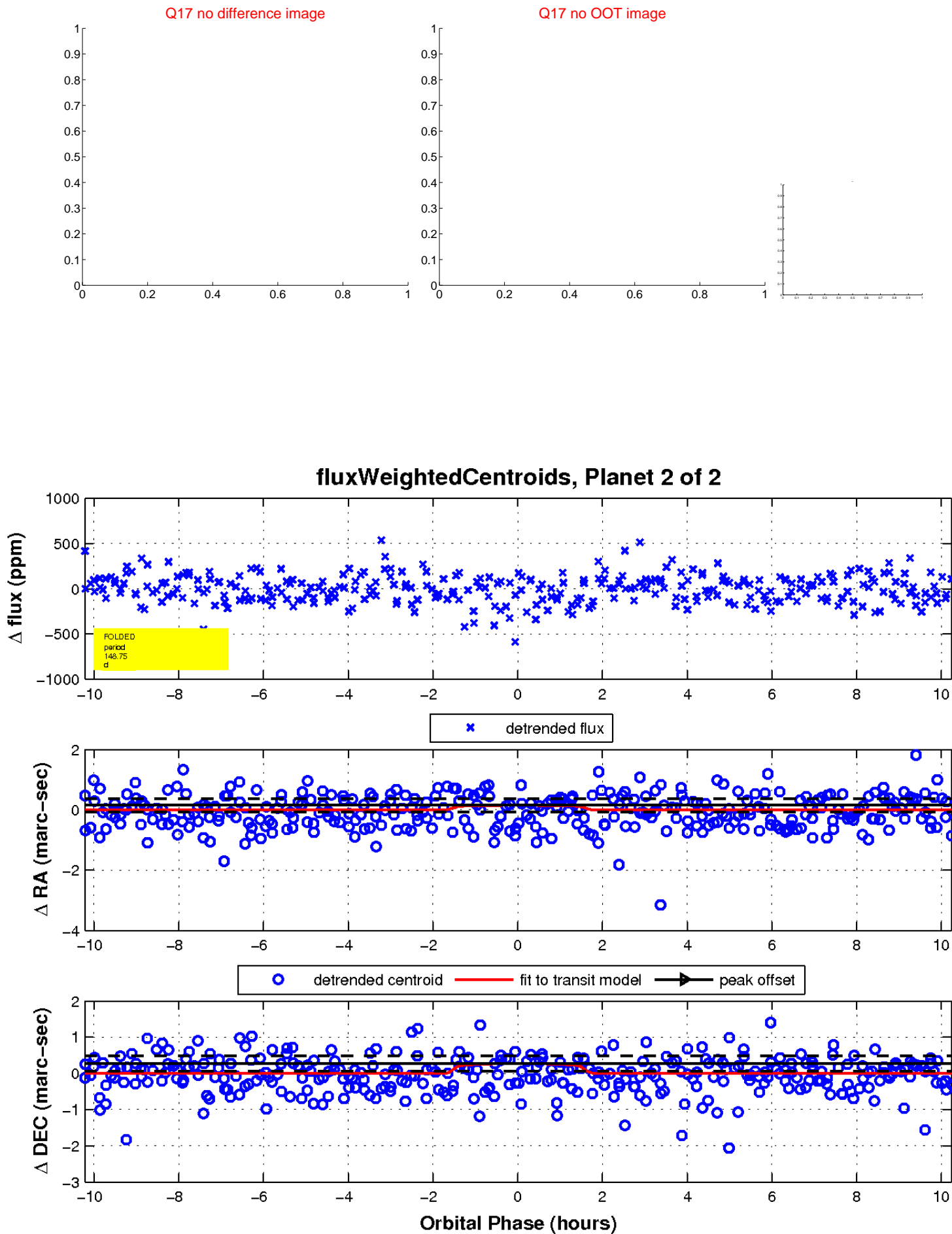
Q16 no difference image



Q16 no OOT image



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



UKIRT Image

Declination

