

KIC 006347299

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})
006347299-01	OBS	0661.01	14.400942	131.785560	383.3	4.051	30.4	32.9	1.20	5815	2.64	111.40
006347299-02	OBS	0661.02	25.661459	155.137340	171.1	4.568	10.9	11.8	1.20	5815	1.86	51.56

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006347299-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT
006347299-02	OBS	PC	0.96	0	0	0	0	NO_COMMENT

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

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

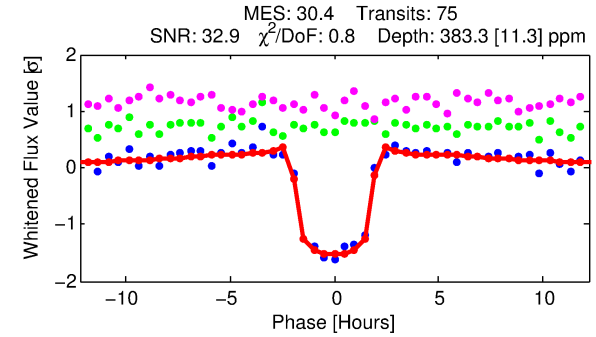
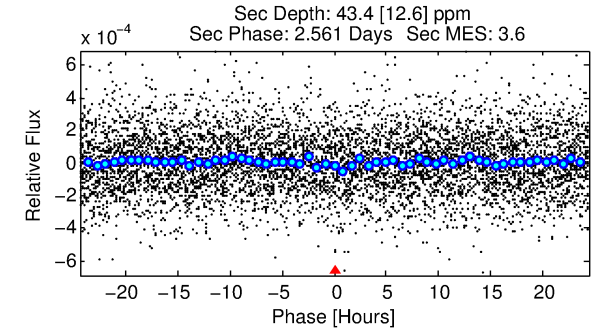
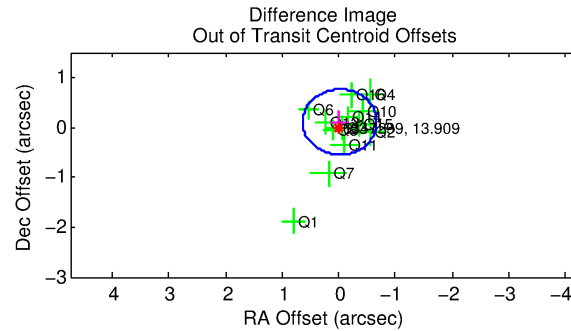
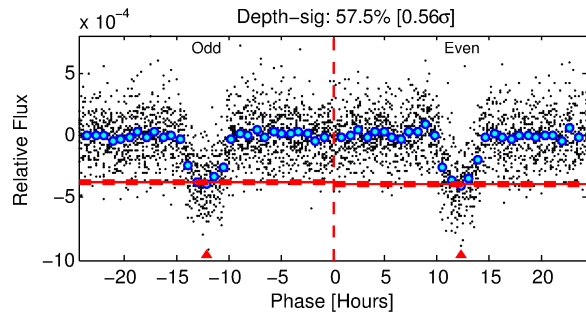
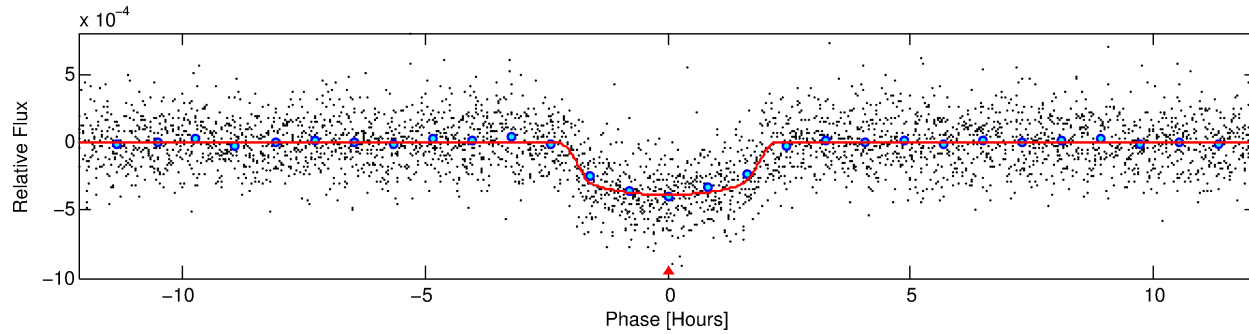
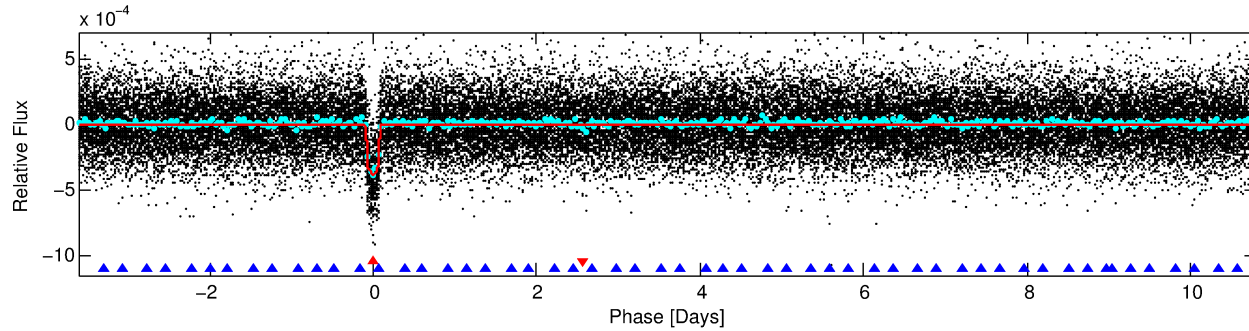
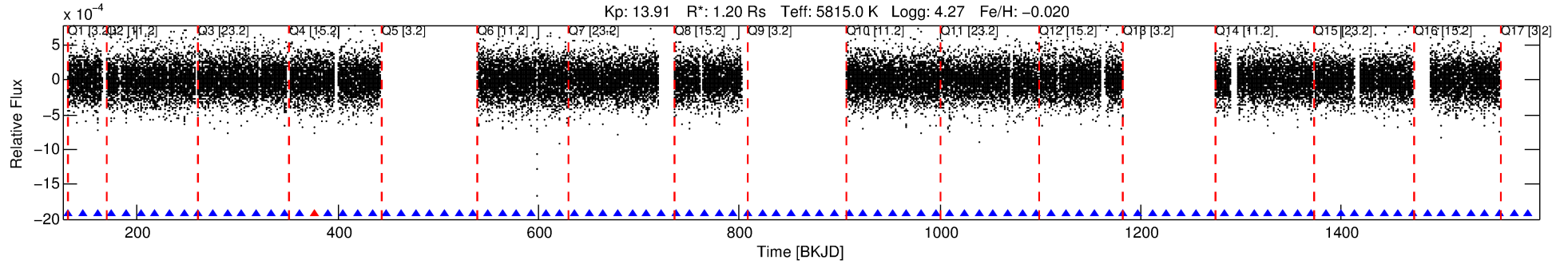
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006347299-01

No Significant Match Found

DV One-Page Summary

KIC: 6347299 Candidate: 1 of 2 Period: 14.401 d
KOI: K00661.01 Name: Kepler-204b Corr: 0.988



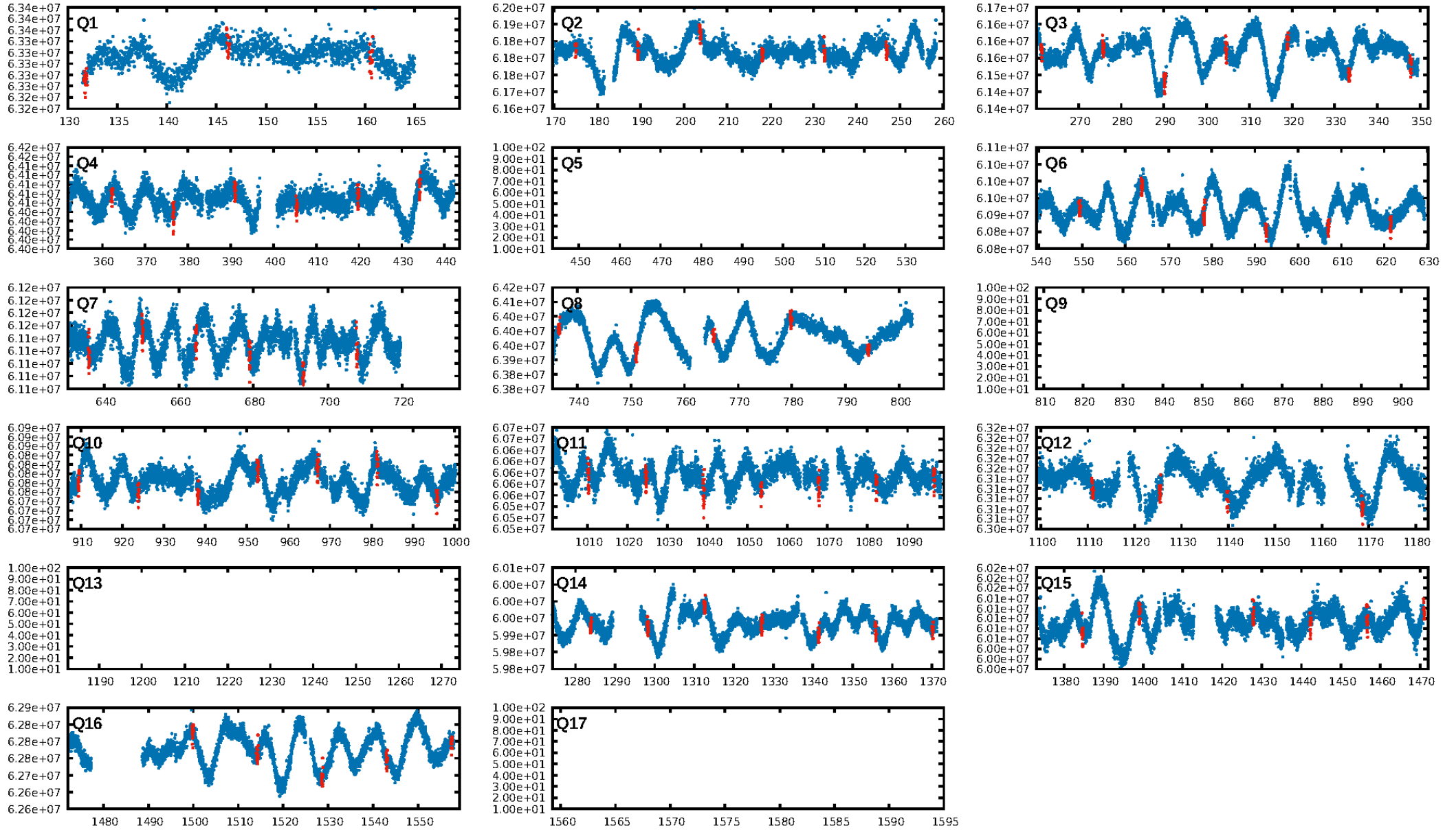
DV Fit Results:

Period = 14.40094 [0.00004] d
Epoch = 131.7856 [0.0020] BKJD
Rp/R* = 0.0202 [0.0032]
a/R* = 16.35 [11.80]
b = 0.82 [0.29]
Seff = 111.40 [30.70]
Teq = 828 [57] K
Rp = 2.64 [0.60] Re
a = 0.1149 [0.0187] AU
Ag = 45.40 [22.87] [1.94 σ]
Teffp = 3325 [363] K [6.79 σ]

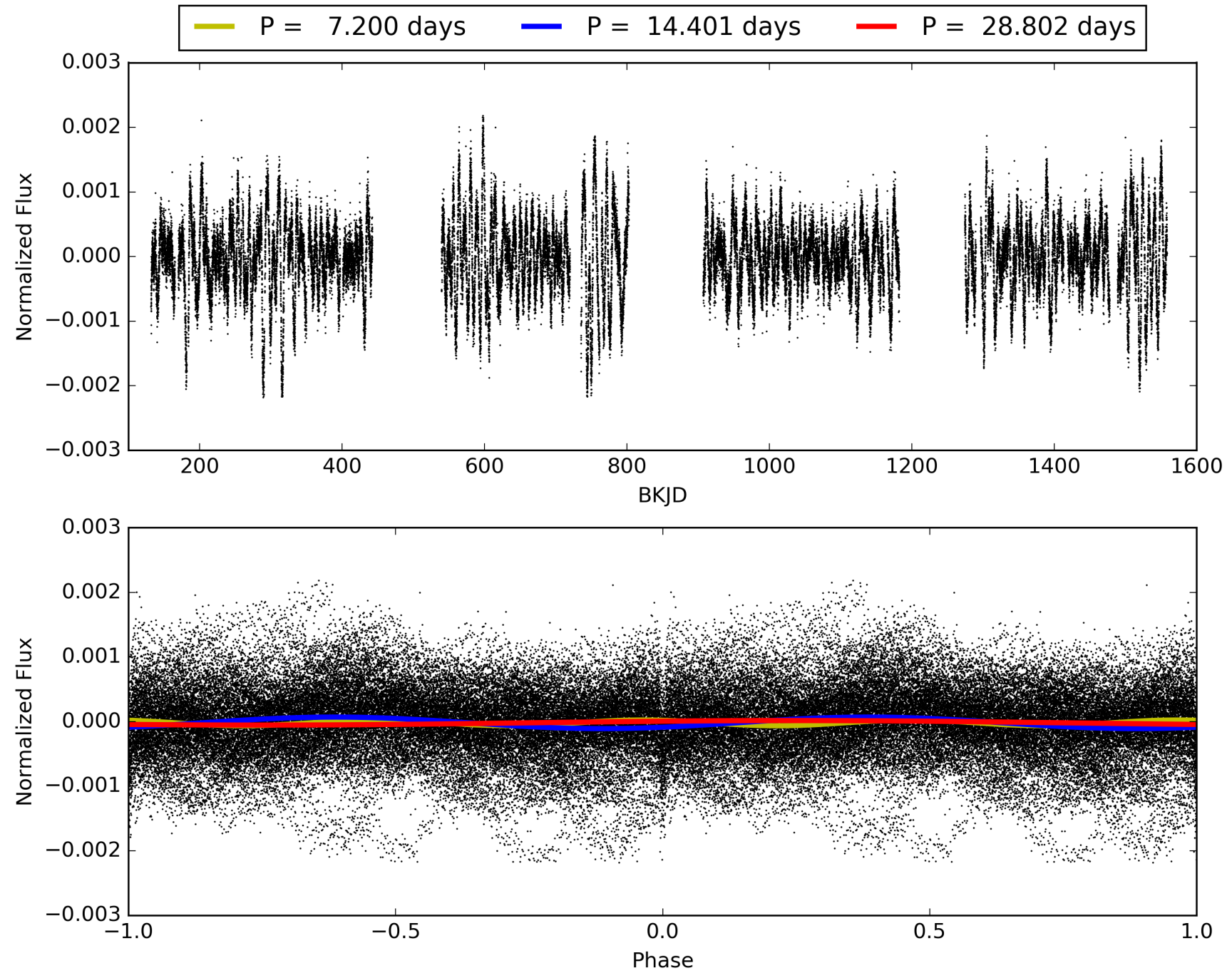
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [44.27 σ]
ModelChiSquare2-sig: 99.9%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 3.21e-191
RollingBand-fgt: 0.99 [71/72]
GhostDiagnostic-chr: 4.502
Centroid-sig: 0.6%
Centroid-so: 0.886 arcsec [3.01 σ]
OotOffset-rm: 0.106 arcsec [0.49 σ]
KicOffset-rm: 0.176 arcsec [1.15 σ]
OotOffset-st: 4/4/4/1 [13]
KicOffset-st: 4/4/4/1 [13]
DiffImageQuality-fgm: 1.00 [13/13]
DiffImageOverlap-fno: 1.00 [13/13]

TCE 006347299-01, PDC Light Curves

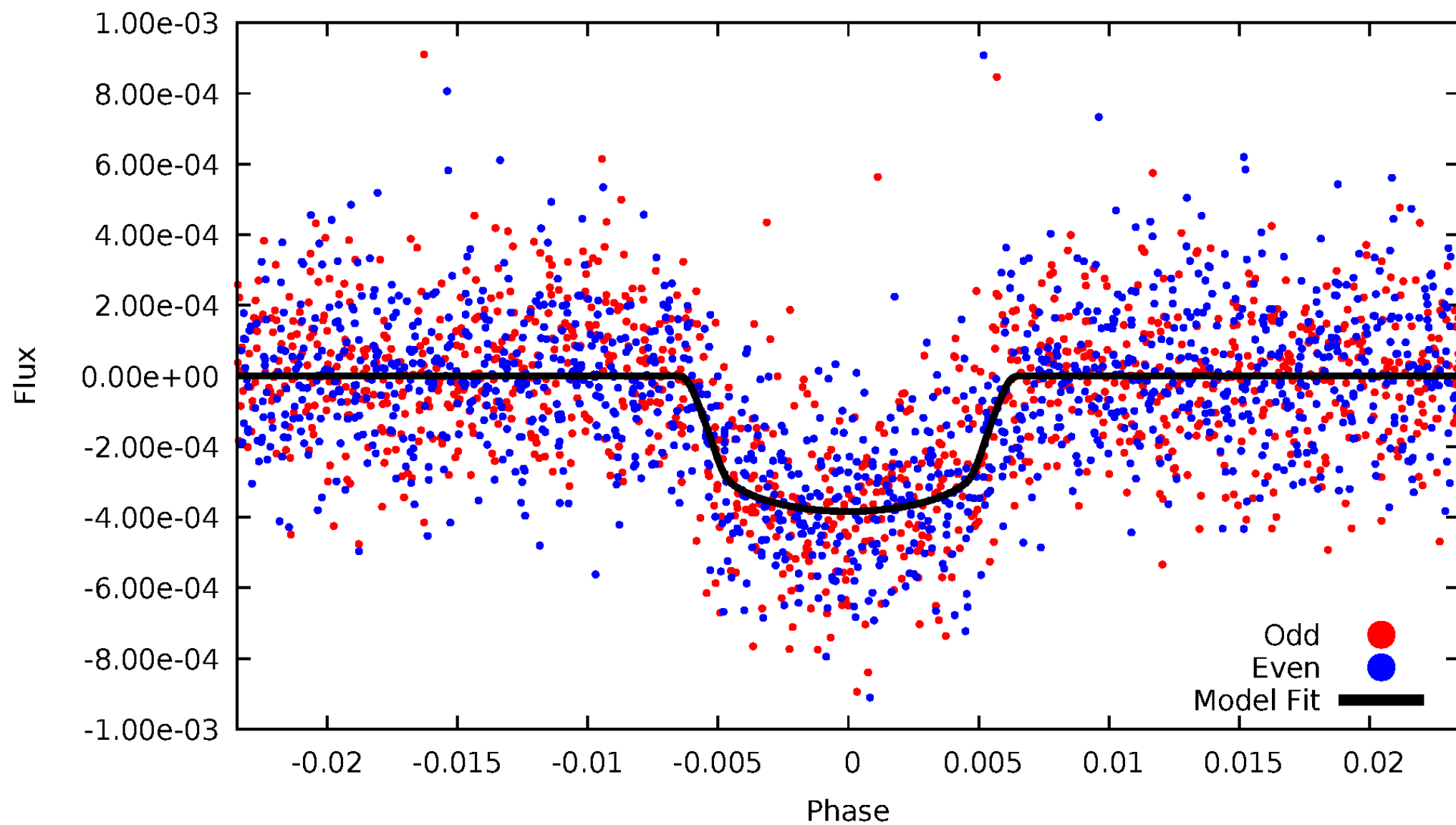


TCE 006347299-01



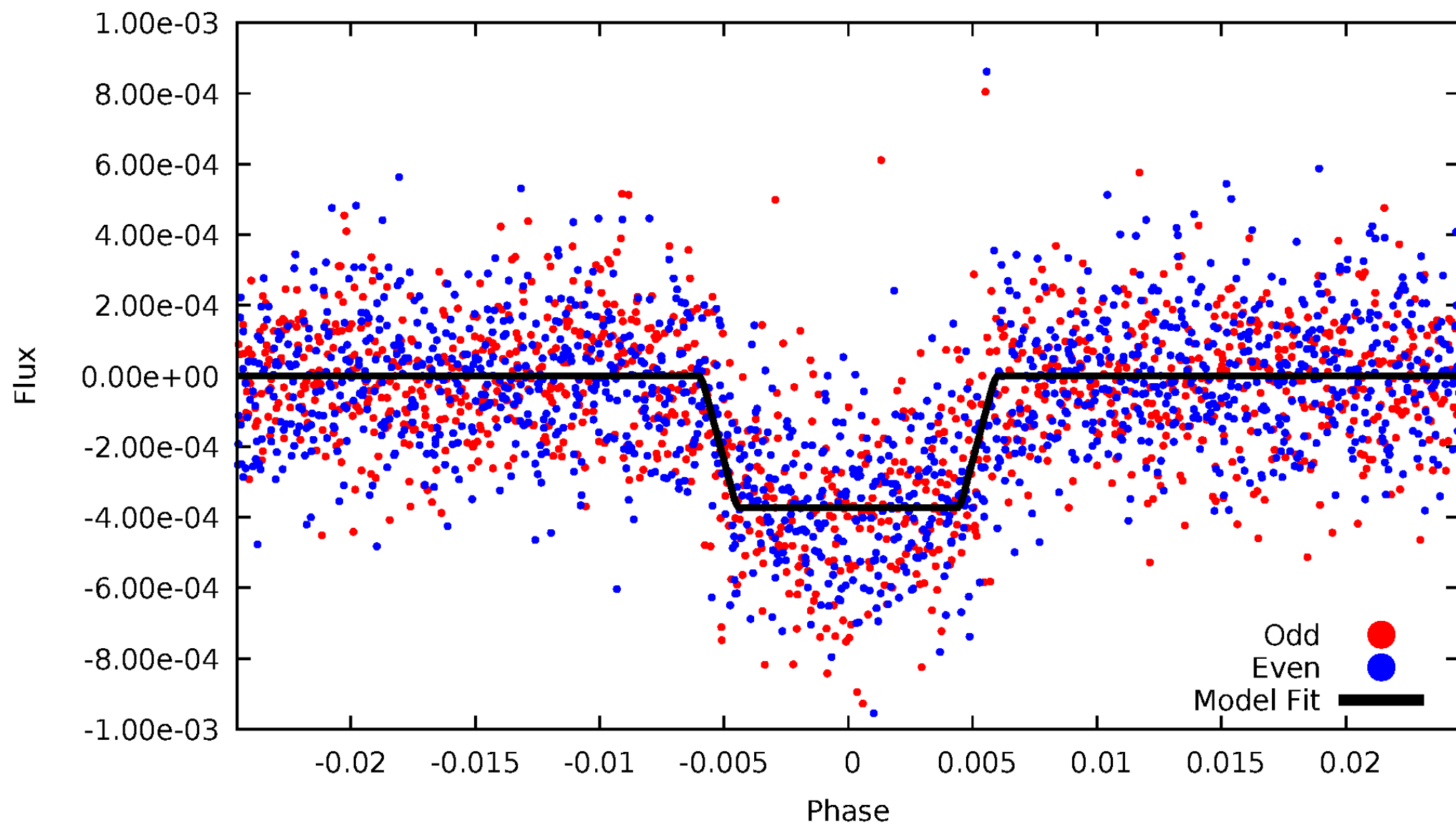
DV Odd/Even

TCE 006347299-01

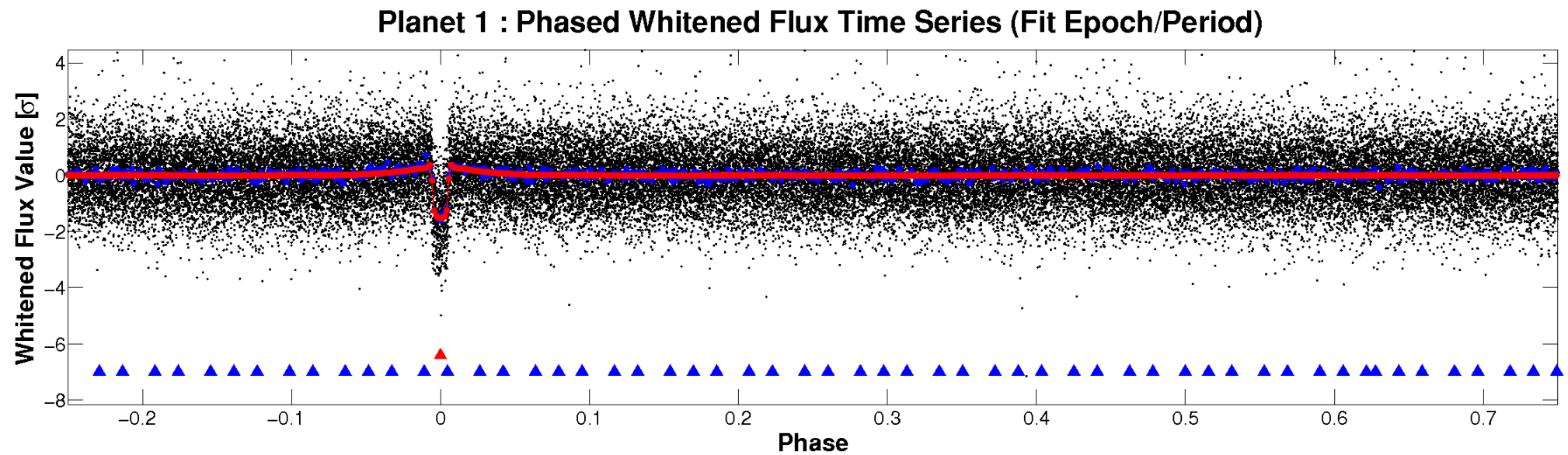
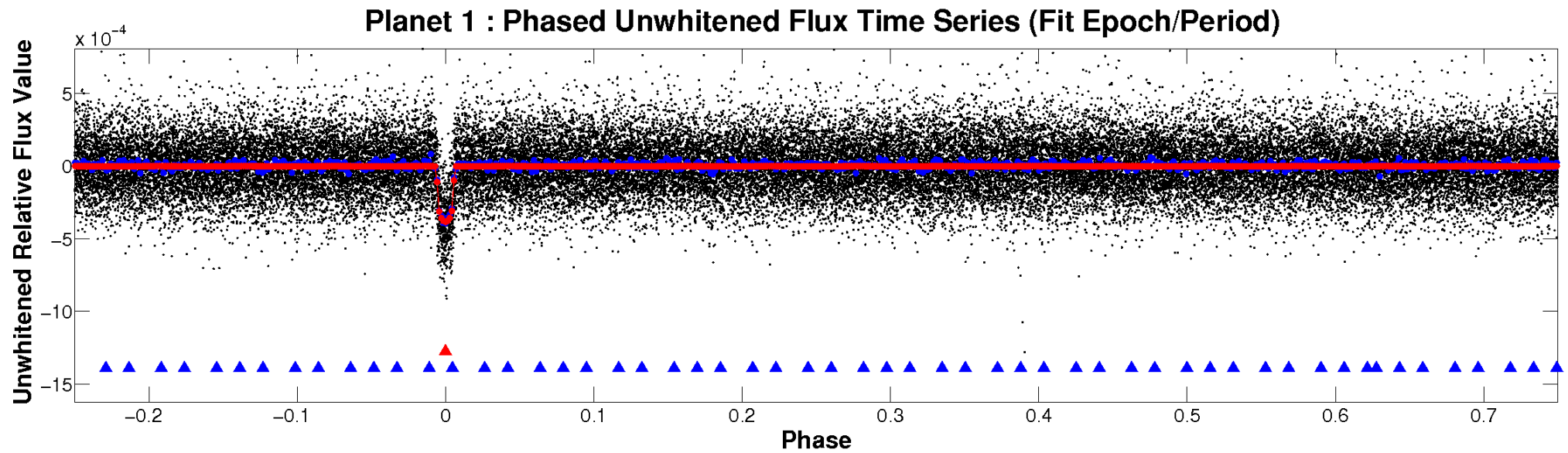


ALT Odd/Even

TCE 006347299-01

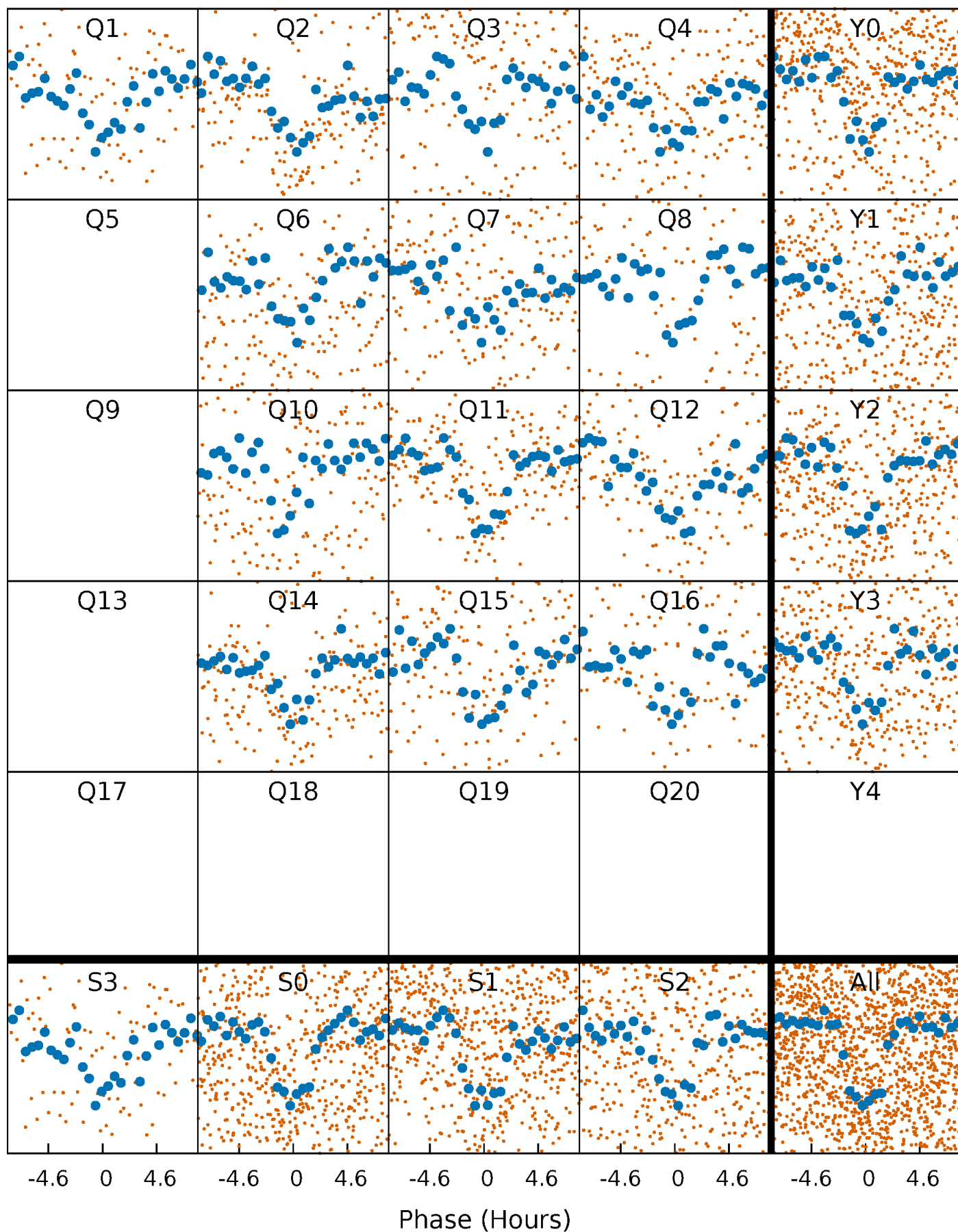


Non-Whitened Vs. Whitened Light Curve



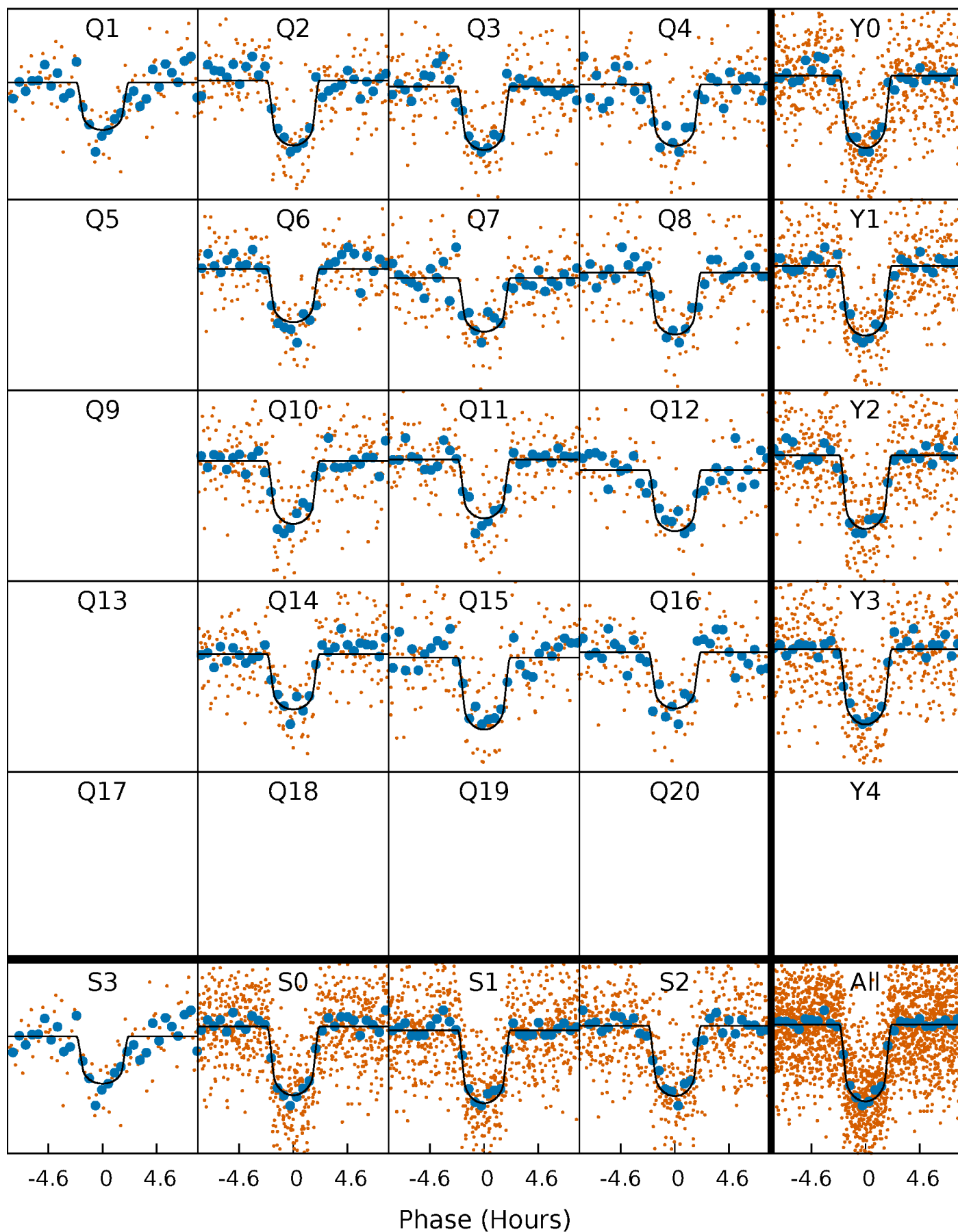
PDC Quarter-Phased Transit Curves

TCE 006347299-01 P= 14.400942 Days $T_0=131.785560$ (BKJD)



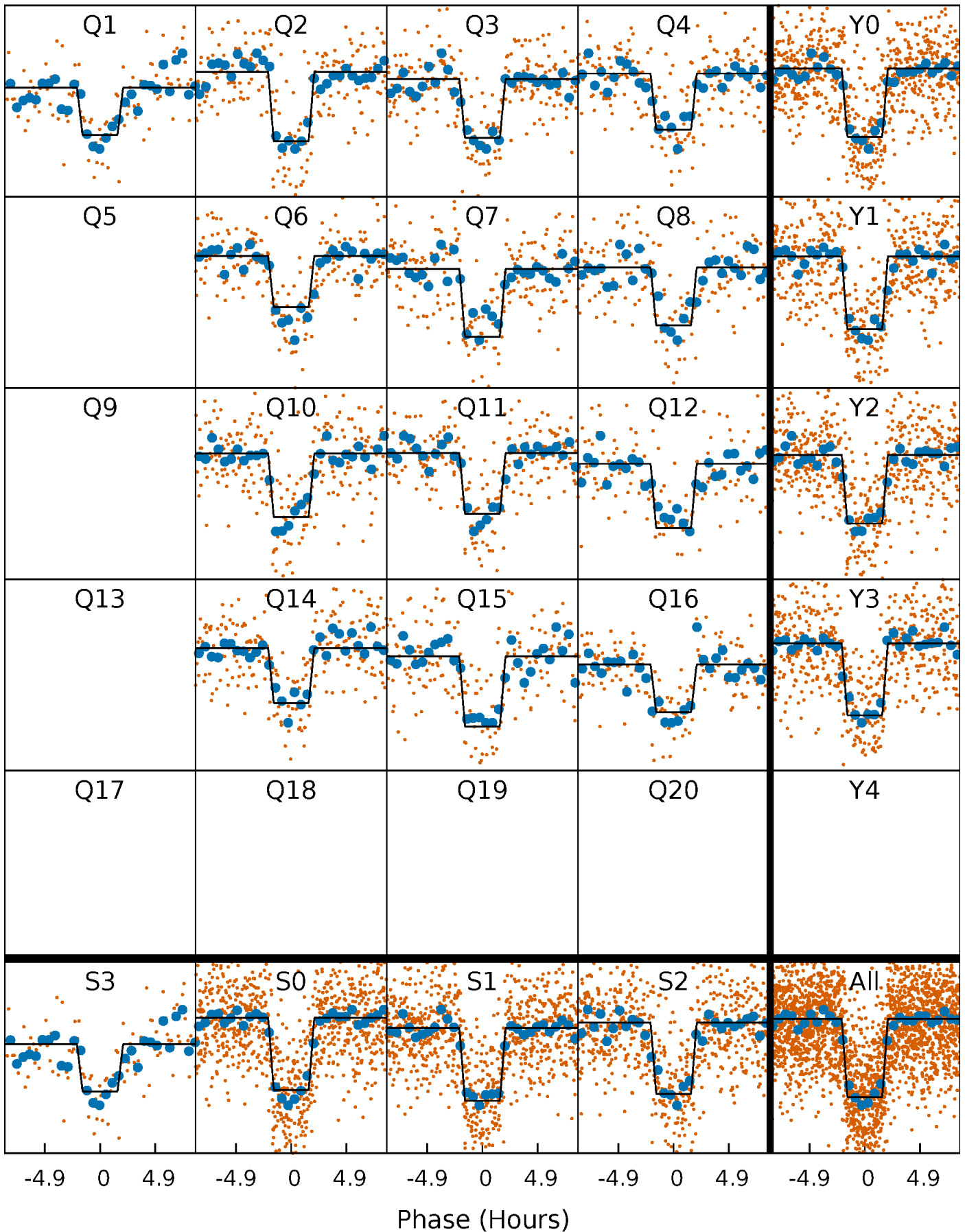
DV Quarter-Phased Transit Curves

TCE 006347299-01 P= 14.400942 Days $T_0=131.785560$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

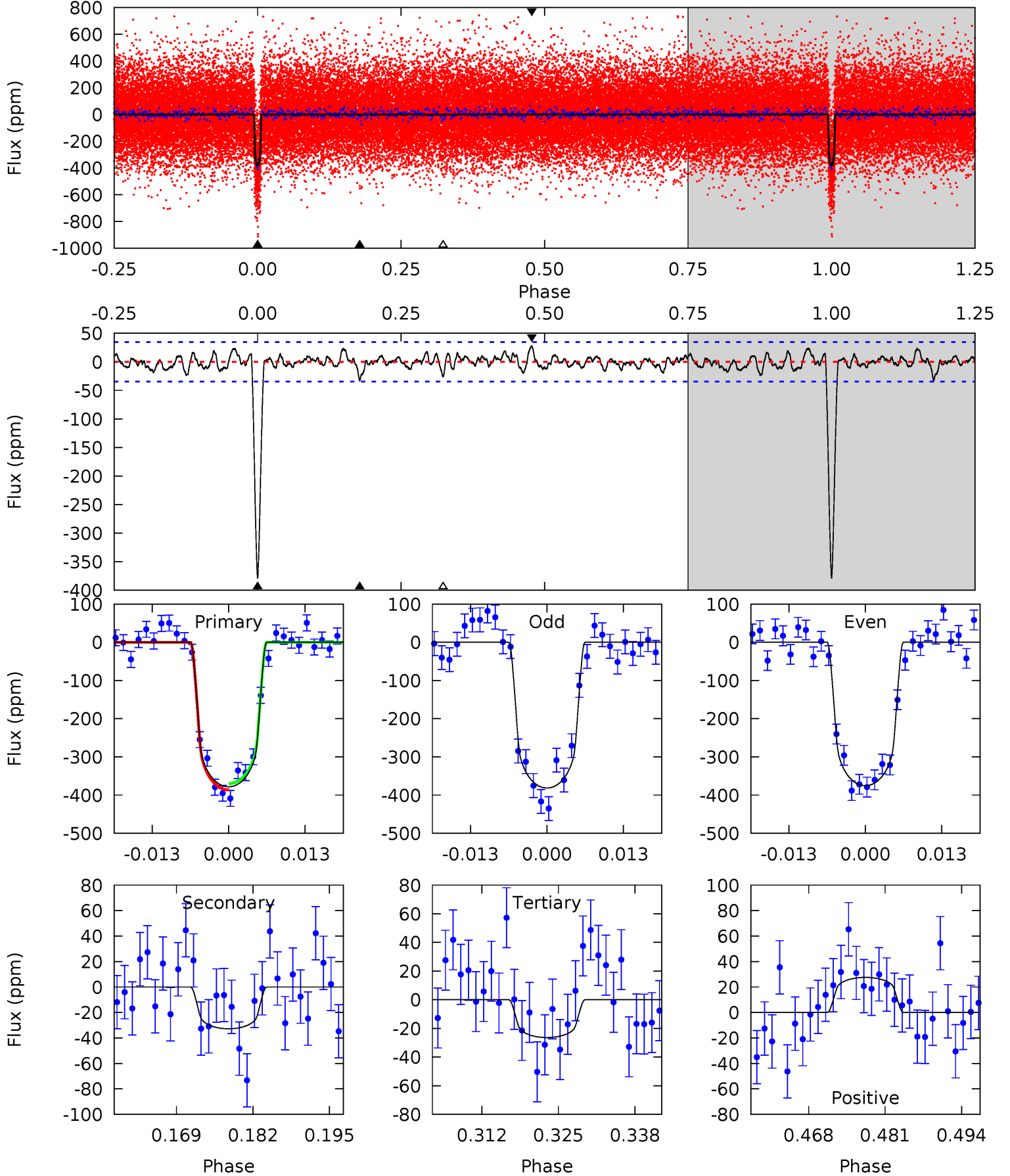
TCE 006347299-01 P= 14.401029 Days $T_0=131.779808$ (BKJD)



DV Model-Shift Uniqueness Test

006347299-01, $P = 14.400942$ Days, $E = 117.384618$ Days

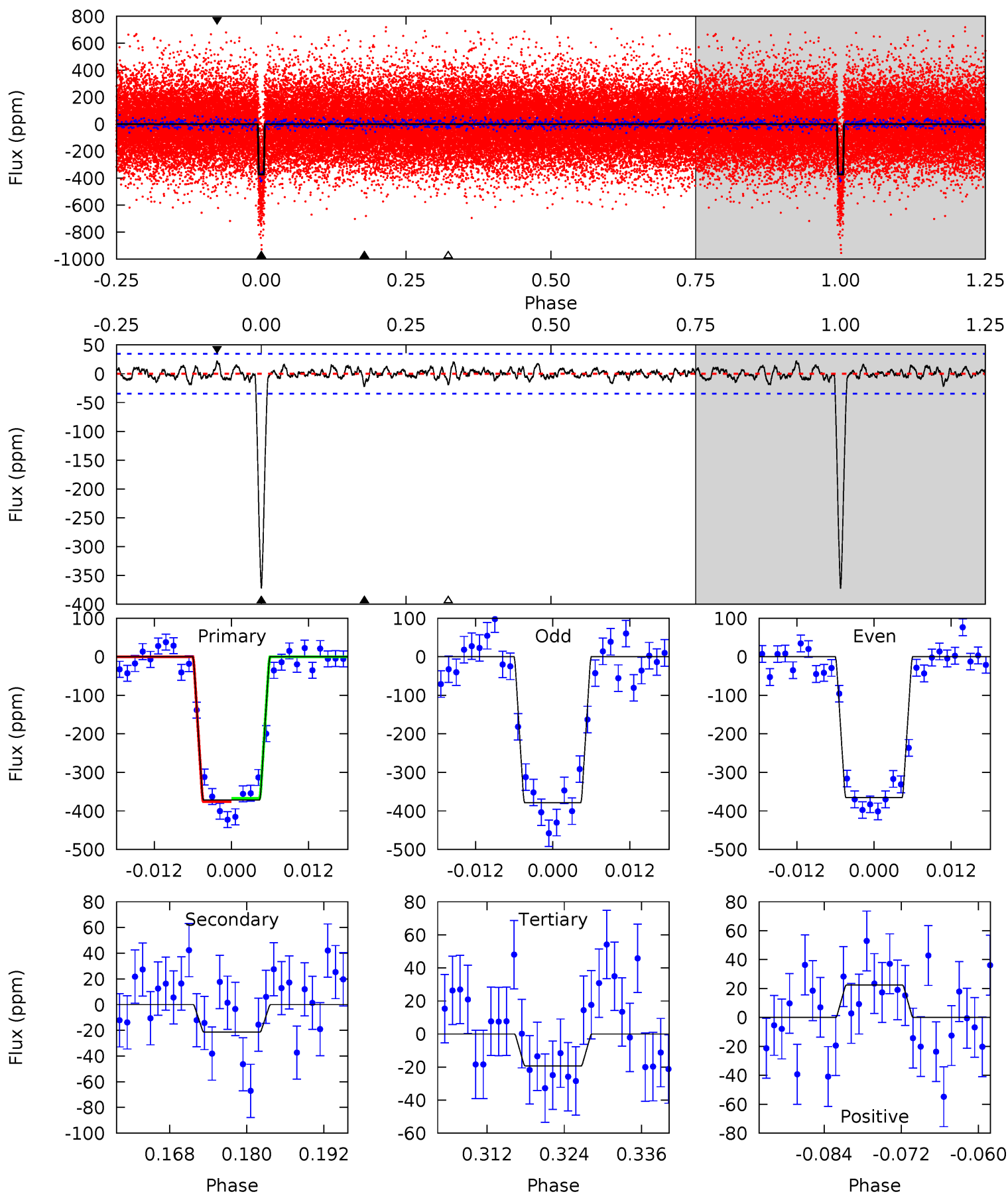
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
54.3	4.71	3.78	3.95	4.98	2.48	1.25	50.5	50.3	0.92	0.75	0.44	1.00	0.07	1.19



Alt Model-Shift Uniqueness Test

006347299-01, $P = 14.401029$ Days, $E = 117.378779$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
53.6	3.08	2.78	3.23	4.99	2.51	0.96	50.8	50.4	0.30	-0.15	0.93	0.99	0.06	0.62



Stellar Parameters For KIC 006347299

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5815^{+105}_{-117}	$4.270^{+0.156}_{-0.104}$	$-0.020^{+0.150}_{-0.150}$	$1.198^{+0.178}_{-0.198}$	$0.976^{+0.078}_{-0.071}$	$0.799^{+0.585}_{-0.244}$
	+2%/-2%	+4%/-2%	+750%/-750%	+15%/-17%	+8%/-7%	+73%/-31%
Source	SPE58	SPE58	SPE58	DSEP		

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

Secondary Eclipse Parameters for KIC 006347299-01 / KOI 0661.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-33 ± 7	$2.60^{+0.47}_{-0.50}$	1152^{+53}_{-62}	3555^{+268}_{-208}	35^{+21}_{-12}
Alt.	-21 ± 7	$2.46^{+0.52}_{-0.44}$	1151^{+56}_{-58}	3373^{+266}_{-257}	25^{+17}_{-10}

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

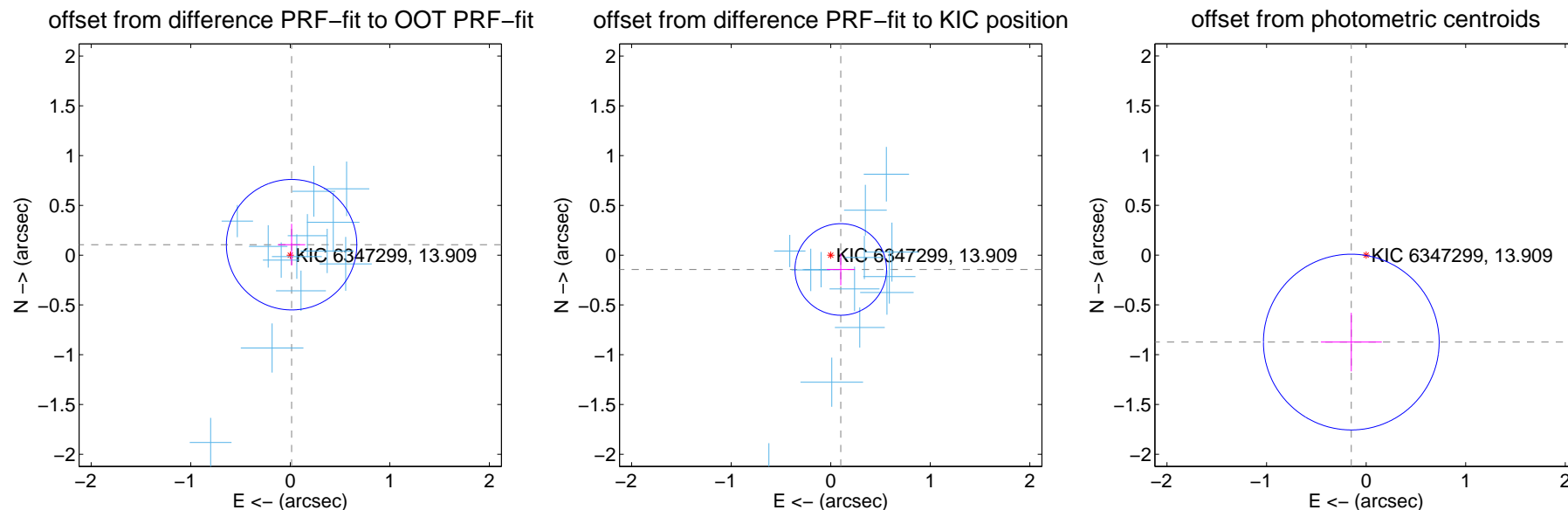
DV Centroid Data

Supplemental centroid analysis for 006347299-01. Kepler magnitude: 13.91. Transit SNR 32.91

There are 13 quarters with good PRF difference image offsets

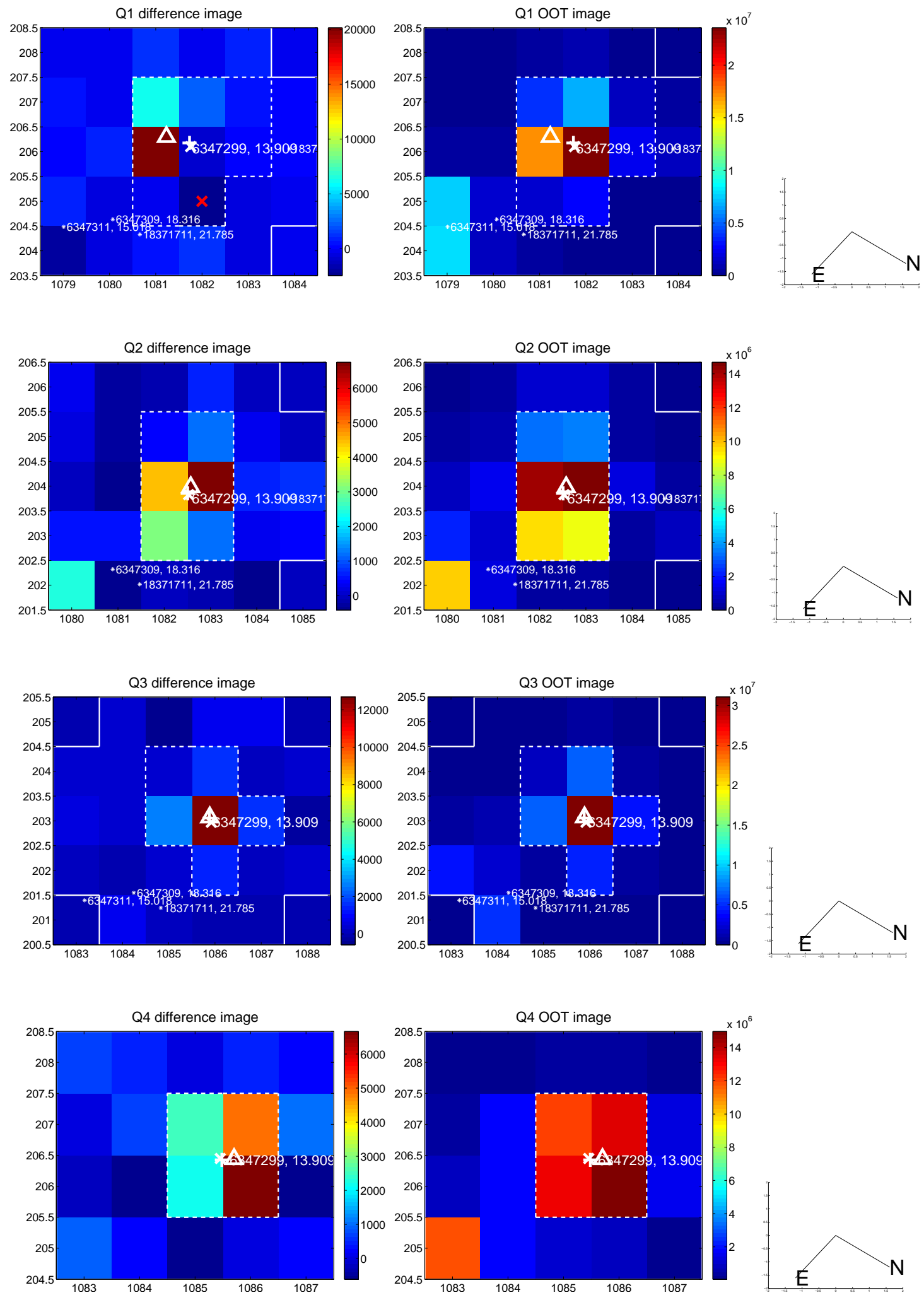
The direct PRF centroid is offset from the target star catalog position by about 0.22 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.106 ± 0.218	0.49	-0.013 ± 0.137	0.105 ± 0.209
PRF-fit source offset from KIC position	0.176 ± 0.153	1.15	-0.101 ± 0.142	-0.144 ± 0.159
photometric centroid source offset	0.89 ± 0.29	3.01	0.15 ± 0.31	-0.87 ± 0.29

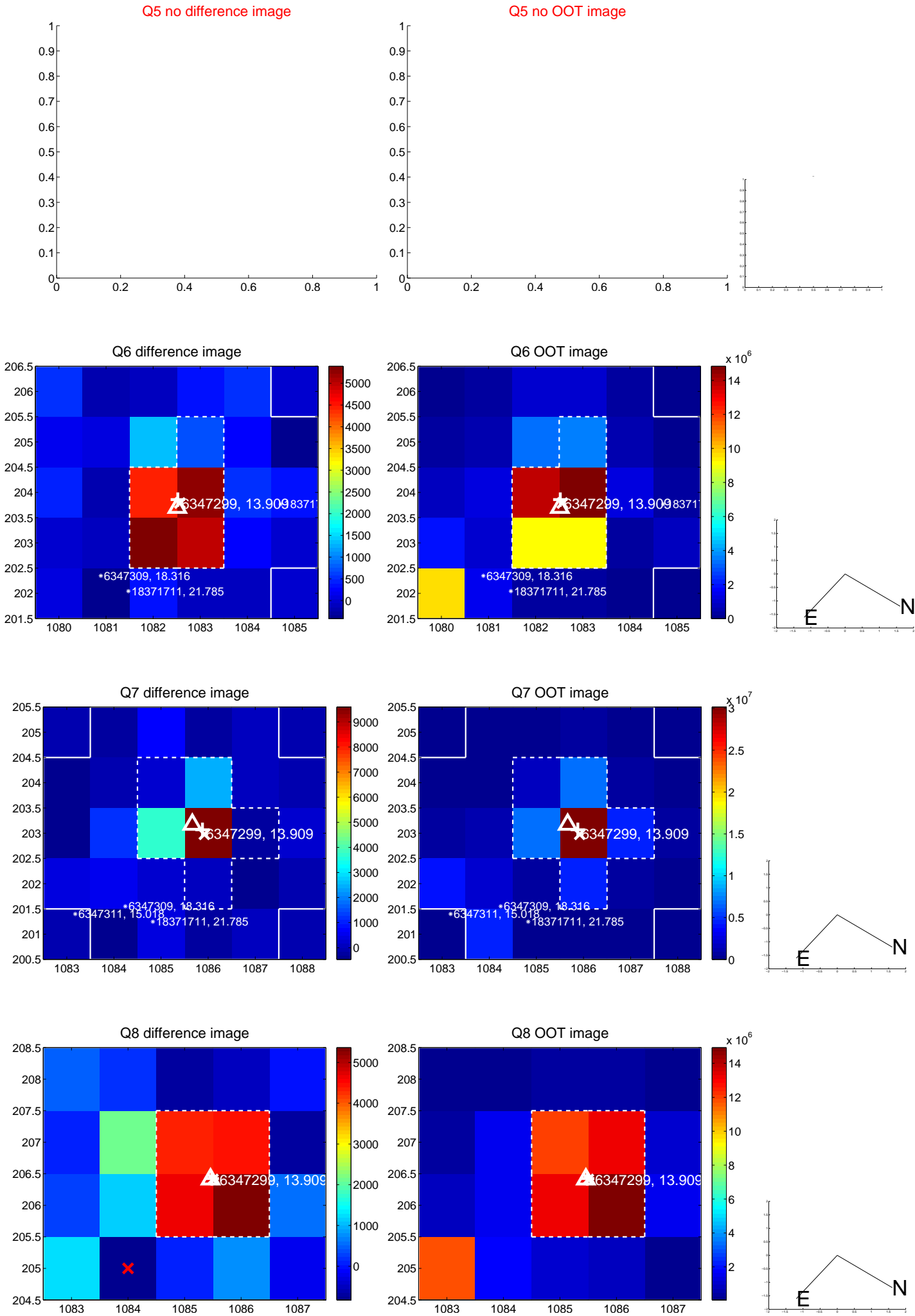


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

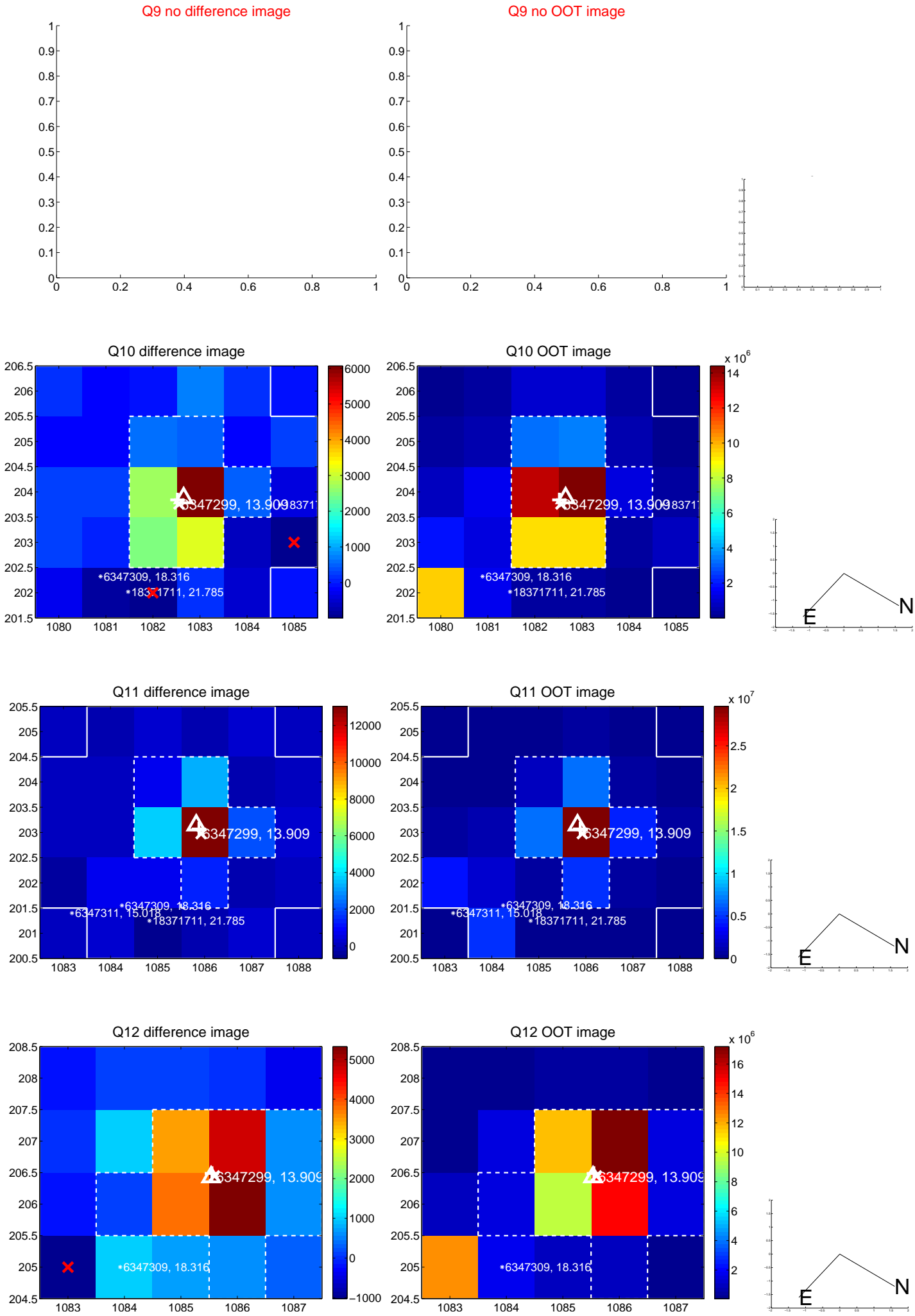
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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.

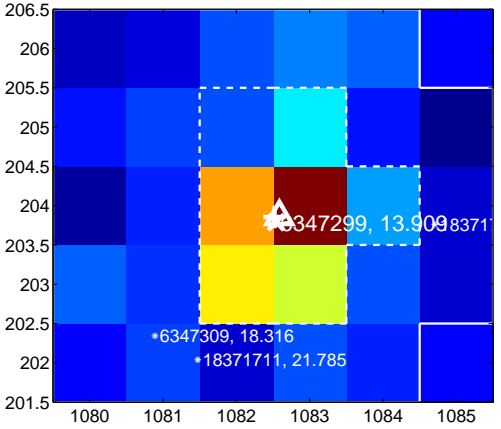
Q13 no difference image



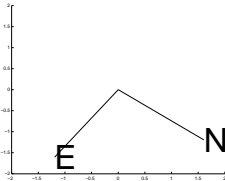
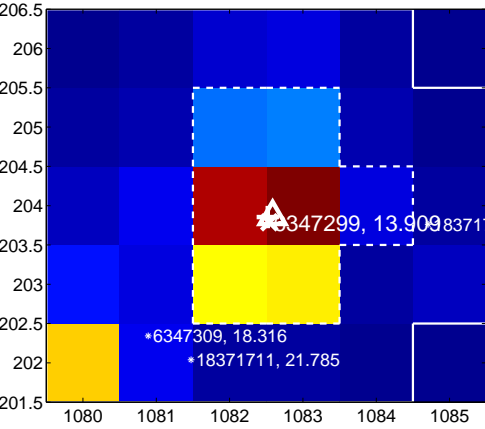
Q13 no OOT image



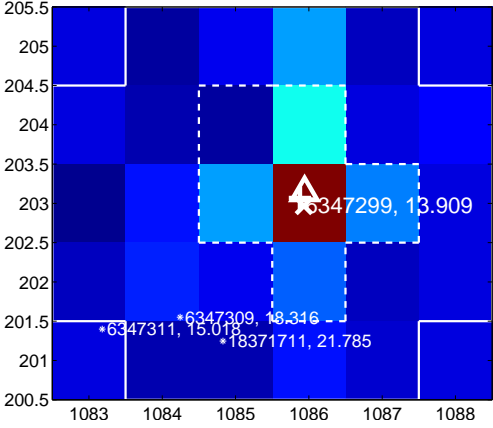
Q14 difference image



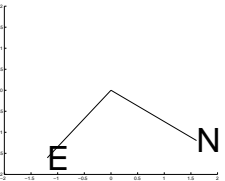
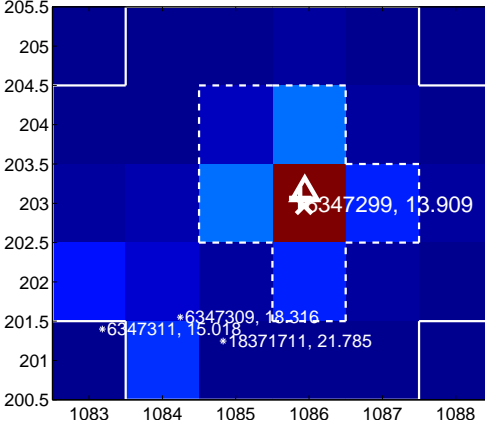
Q14 OOT image



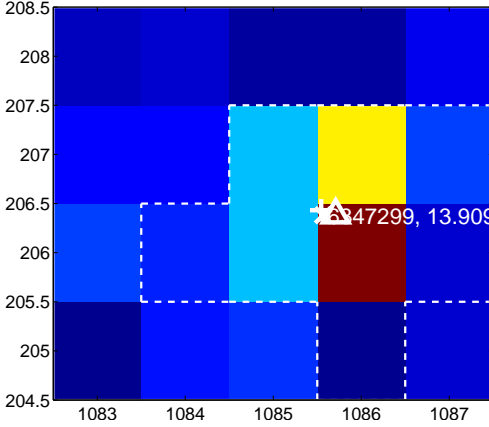
Q15 difference image



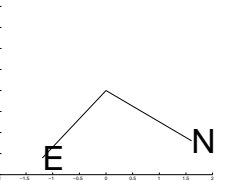
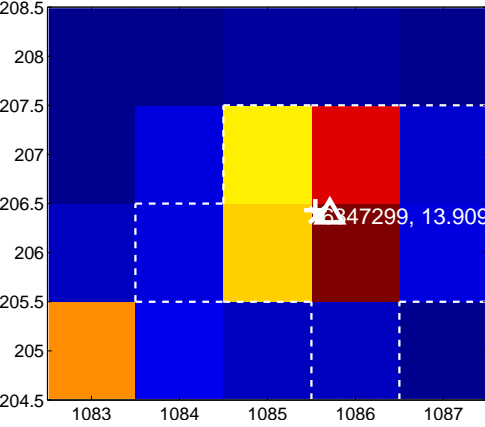
Q15 OOT image



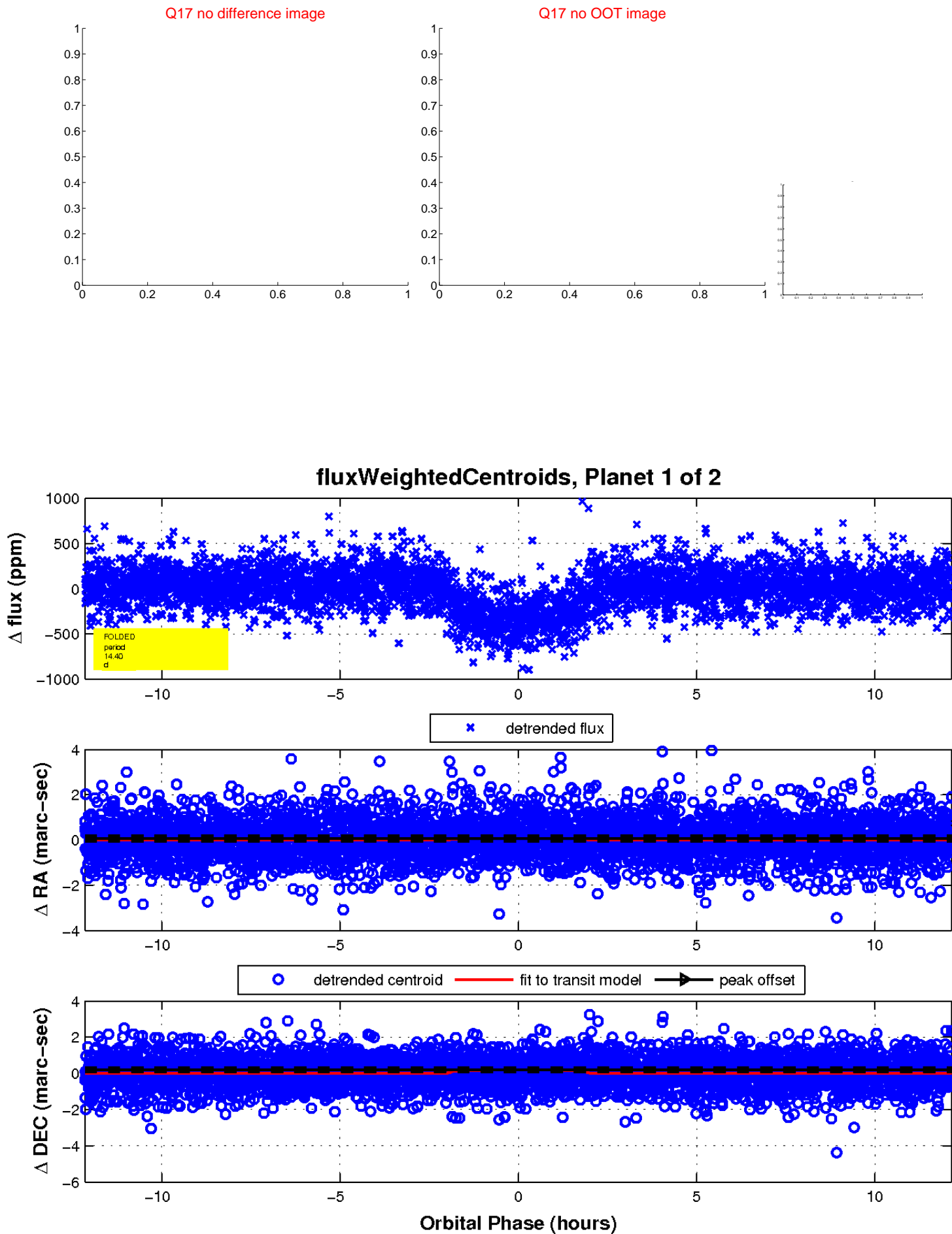
Q16 difference image



Q16 OOT image

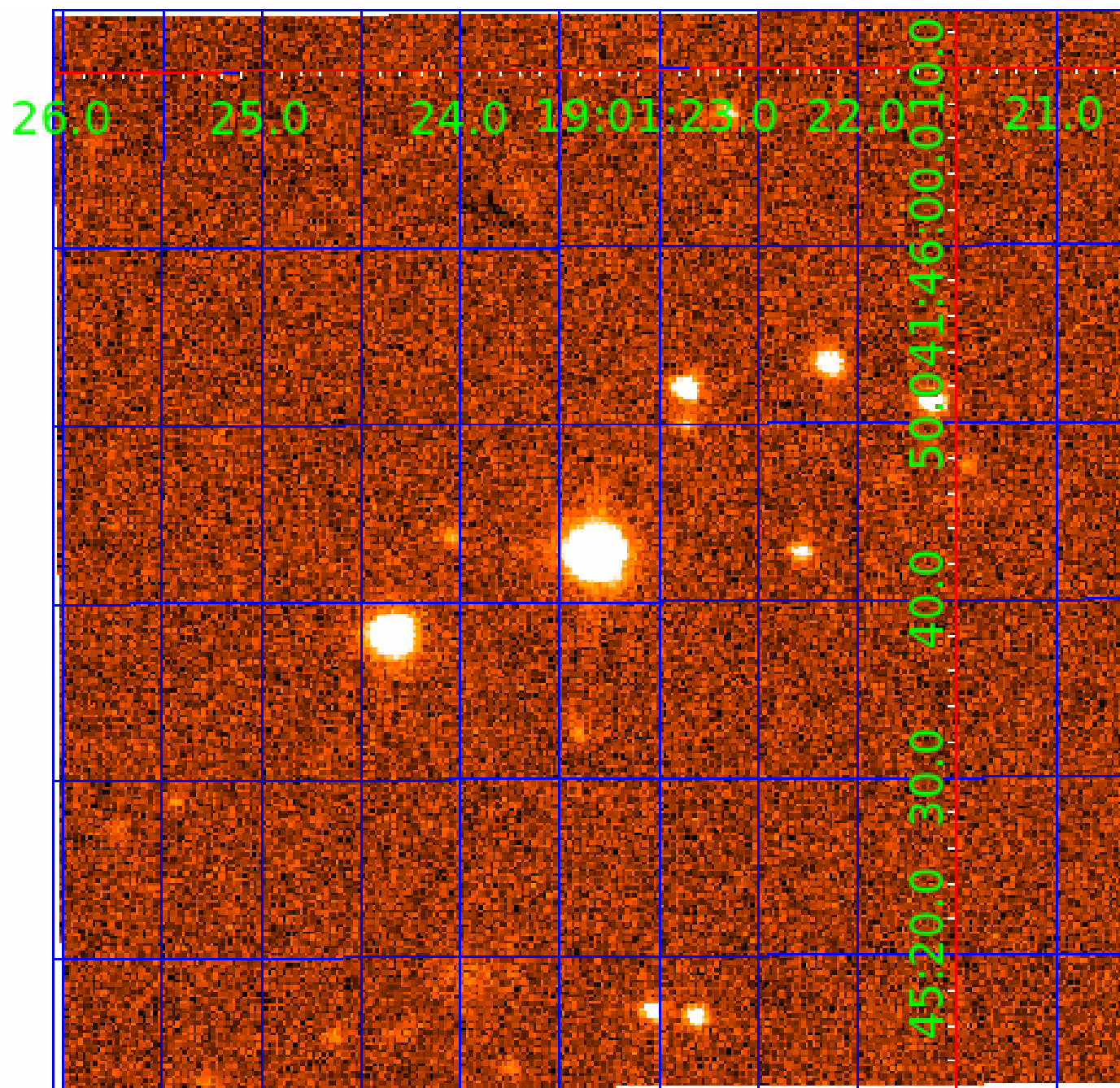


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 006347299

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})
006347299-01	OBS	0661.01	14.400942	131.785560	383.3	4.051	30.4	32.9	1.20	5815	2.64	111.40
006347299-02	OBS	0661.02	25.661459	155.137340	171.1	4.568	10.9	11.8	1.20	5815	1.86	51.56

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006347299-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT
006347299-02	OBS	PC	0.96	0	0	0	0	NO_COMMENT

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

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

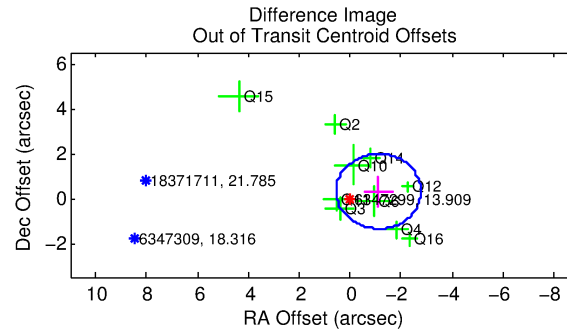
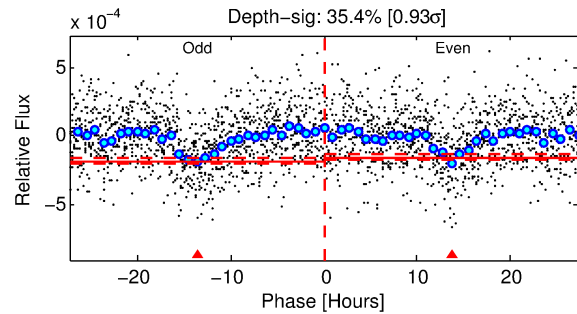
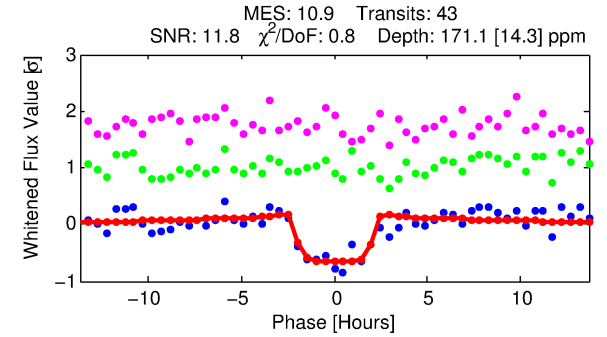
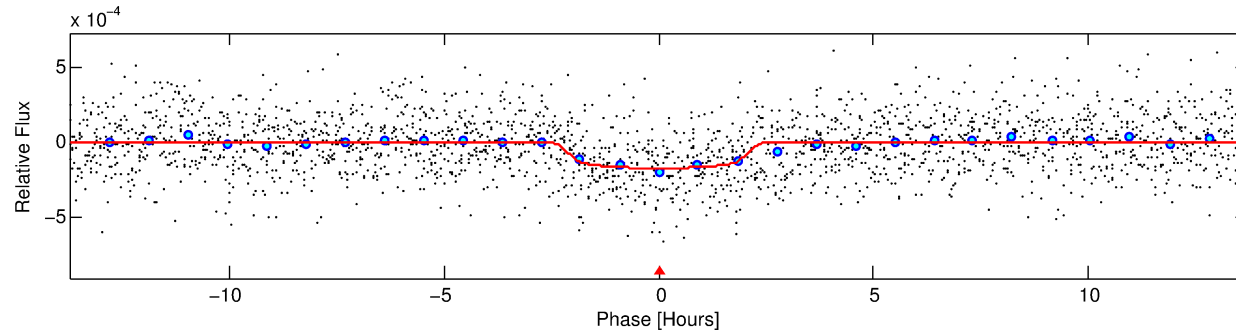
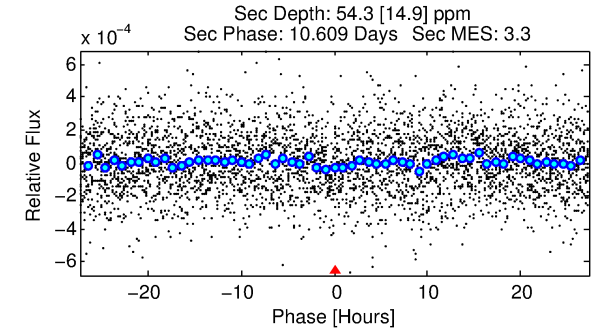
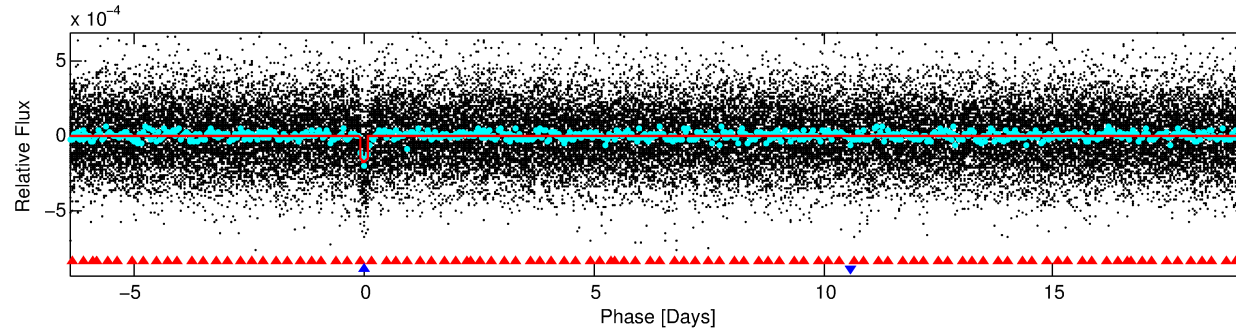
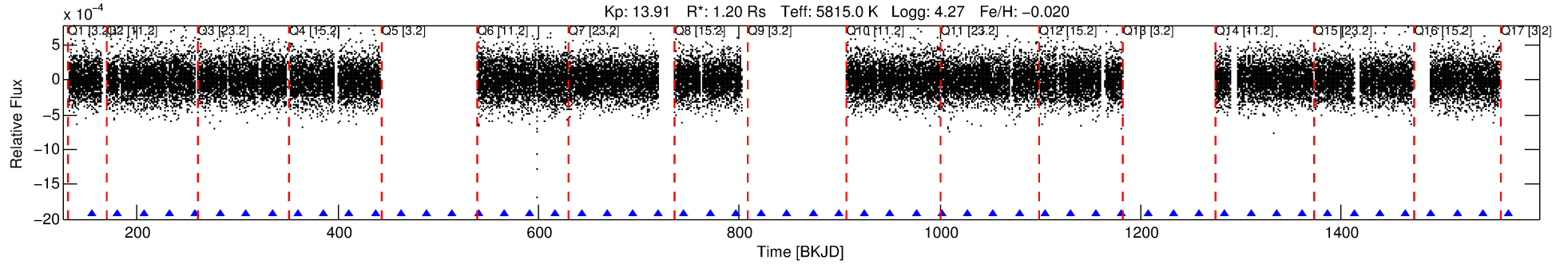
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006347299-02

No Significant Match Found

DV One-Page Summary

KIC: 6347299 Candidate: 2 of 2 Period: 25.661 d
KOI: K00661.02 Name: Kepler-204c Corr: 0.971



DV Fit Results:

Period = 25.66146 [0.00020] d
Epoch = 155.1373 [0.0062] BKJD
Rp/R* = 0.0142 [0.0038]
a/R* = 20.09 [25.65]
b = 0.90 [0.27]
Seff = 51.57 [14.21]
Teq = 683 [47] K
Rp = 1.86 [0.59] Re
a = 0.1689 [0.0275] AU
Ag = 246.41 [162.00] [1.51σ]
Teffp = 4186 [636] K [5.49σ]

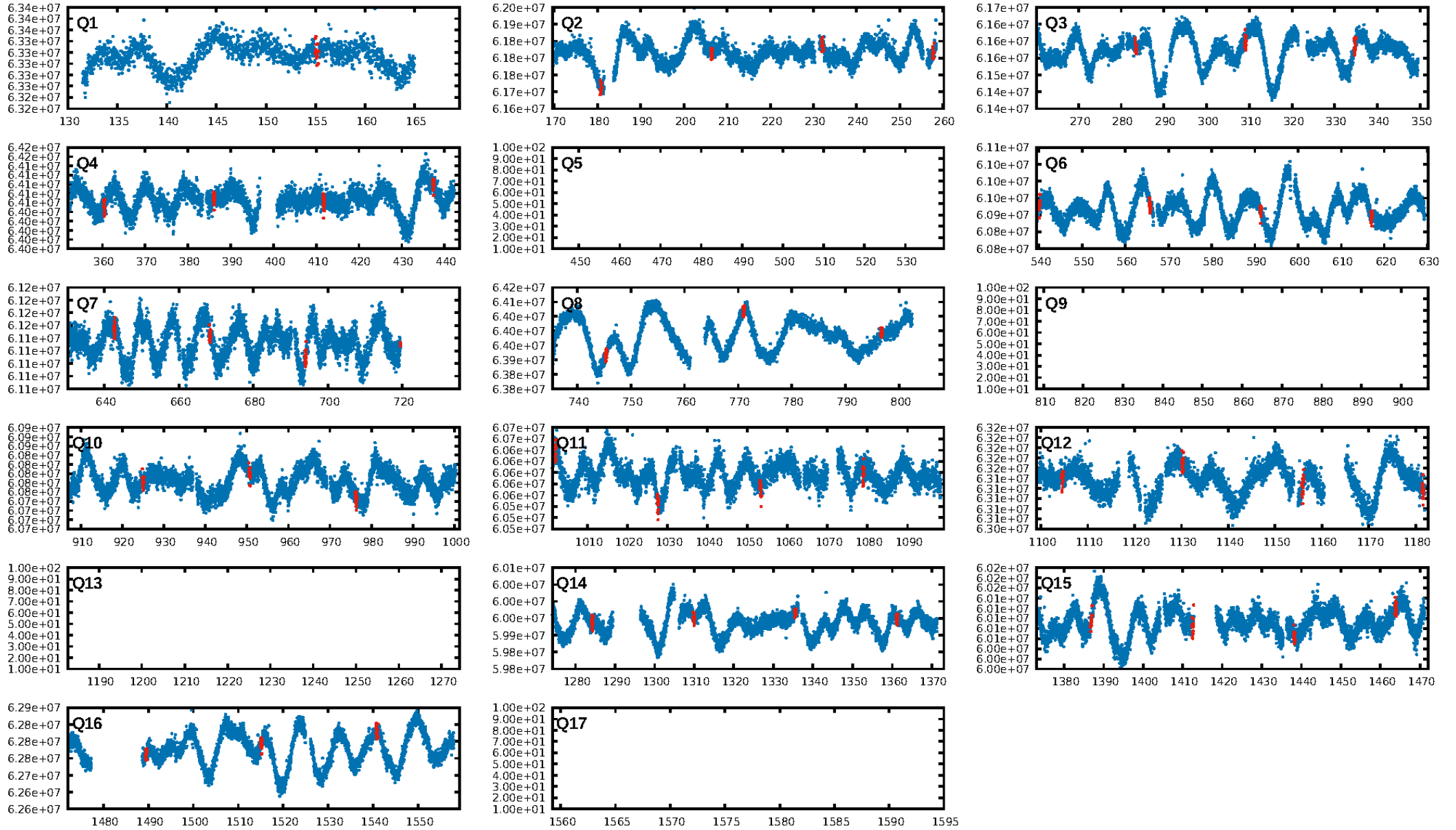
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [44.27σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 72.7%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.21e-26
RollingBand-fgt: 1.00 [42/42]
GhostDiagnostic-chr: -2.627
Centroid-sig: 14.7%
Centroid-so: 1.025 arcsec [1.25σ]
OotOffset-rm: 1.155 arcsec [2.08σ]
KicOffset-rm: 1.201 arcsec [1.96σ]
OotOffset-st: 4/3/3/0 [10]
KicOffset-st: 4/3/3/0 [10]
DiffImageQuality-fgm: 0.80 [8/10]
DiffImageOverlap-fno: 1.00 [13/13]

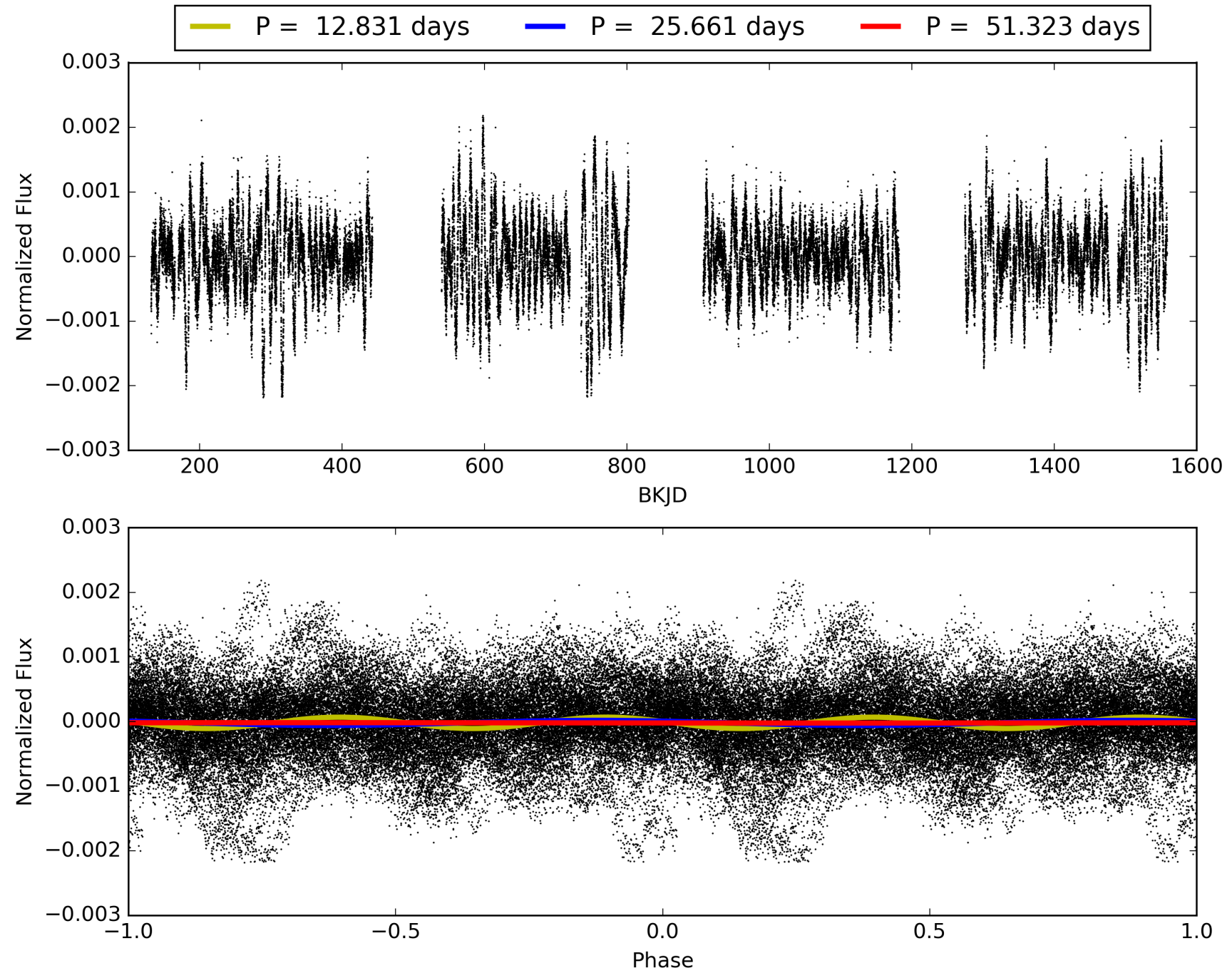
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 02:09:45 Z

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

TCE 006347299-02, PDC Light Curves

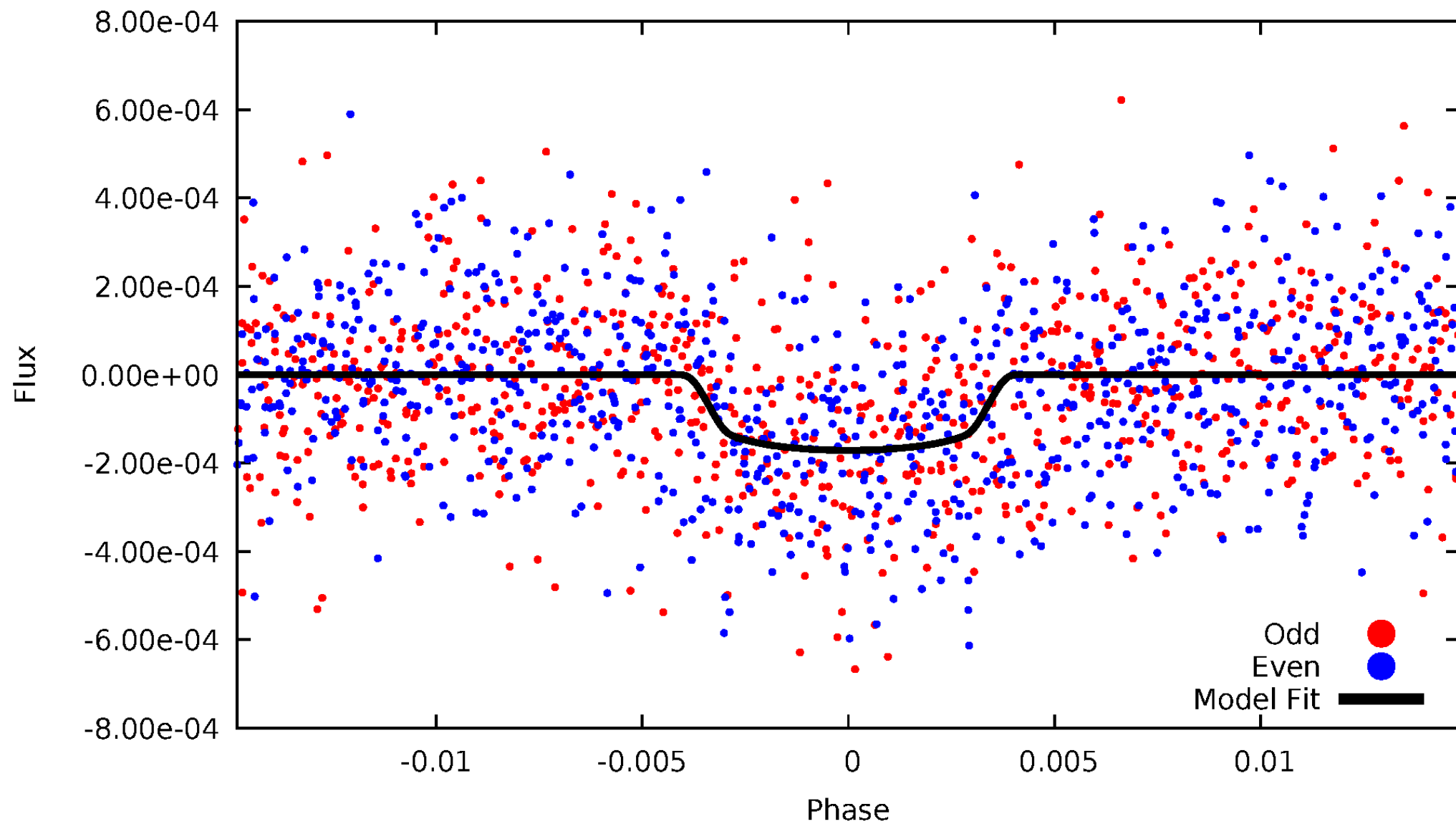


TCE 006347299-02



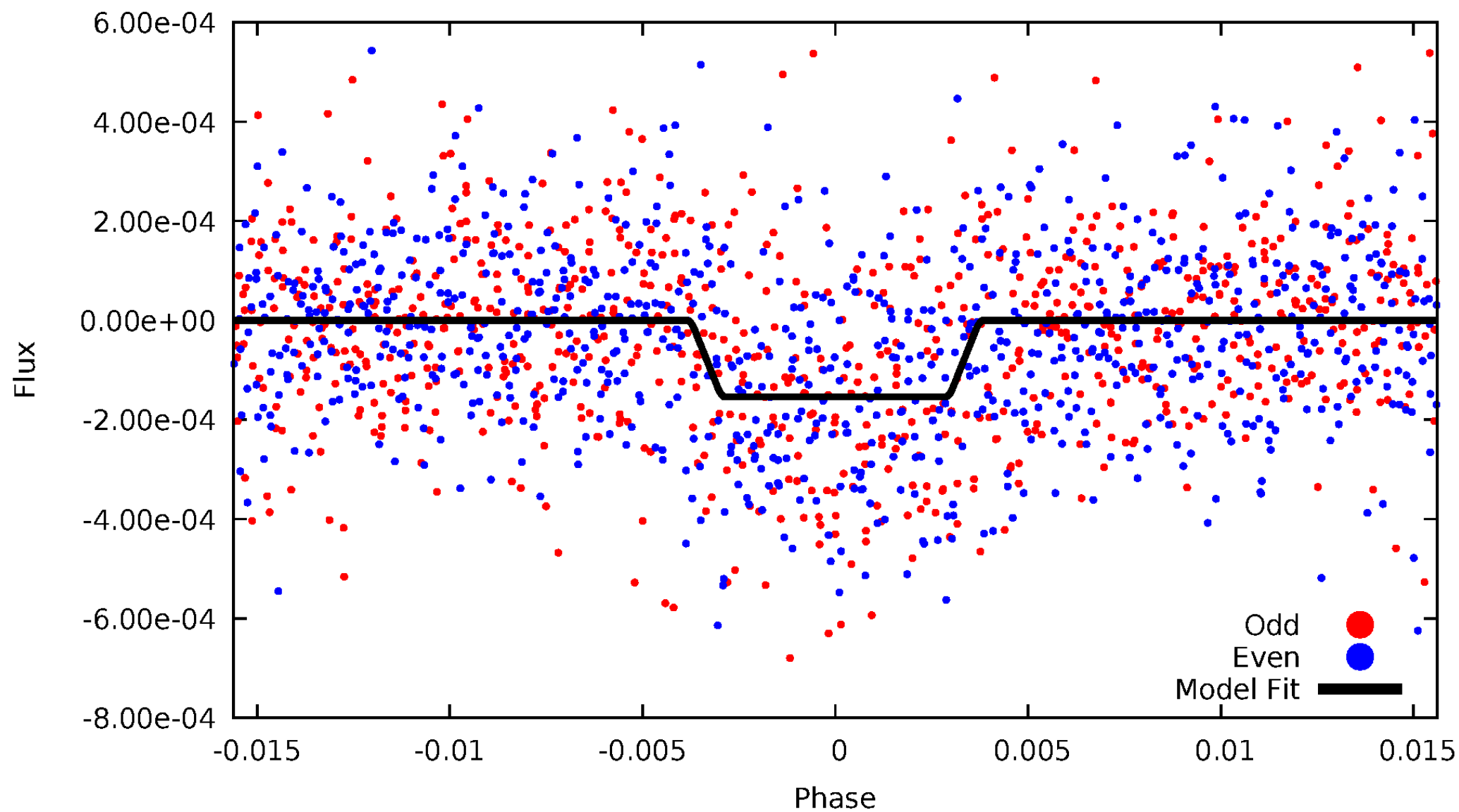
DV Odd/Even

TCE 006347299-02



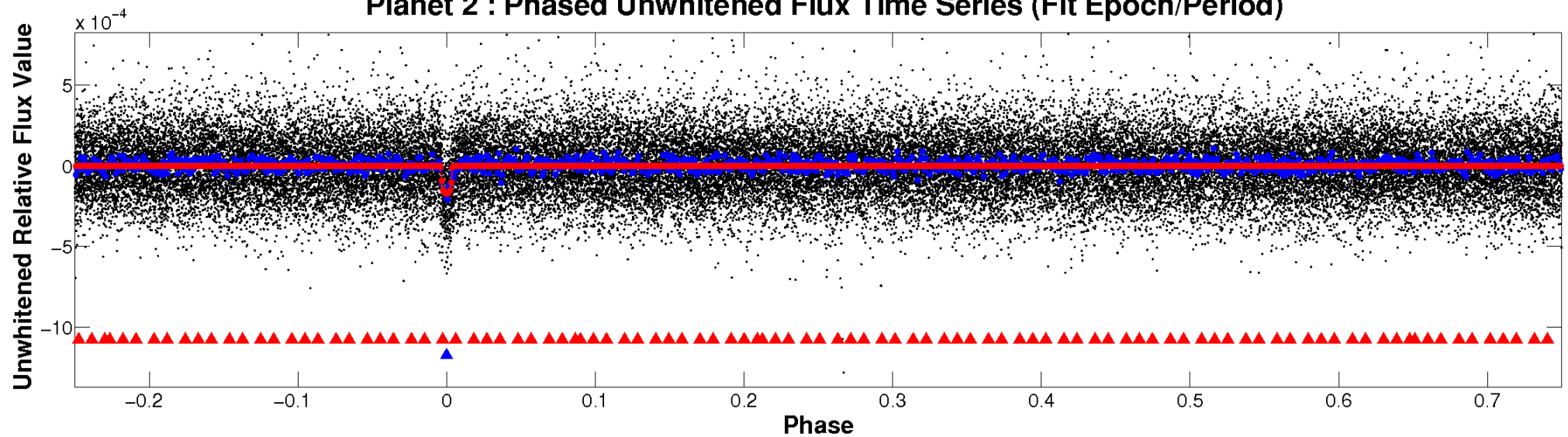
ALT Odd/Even

TCE 006347299-02

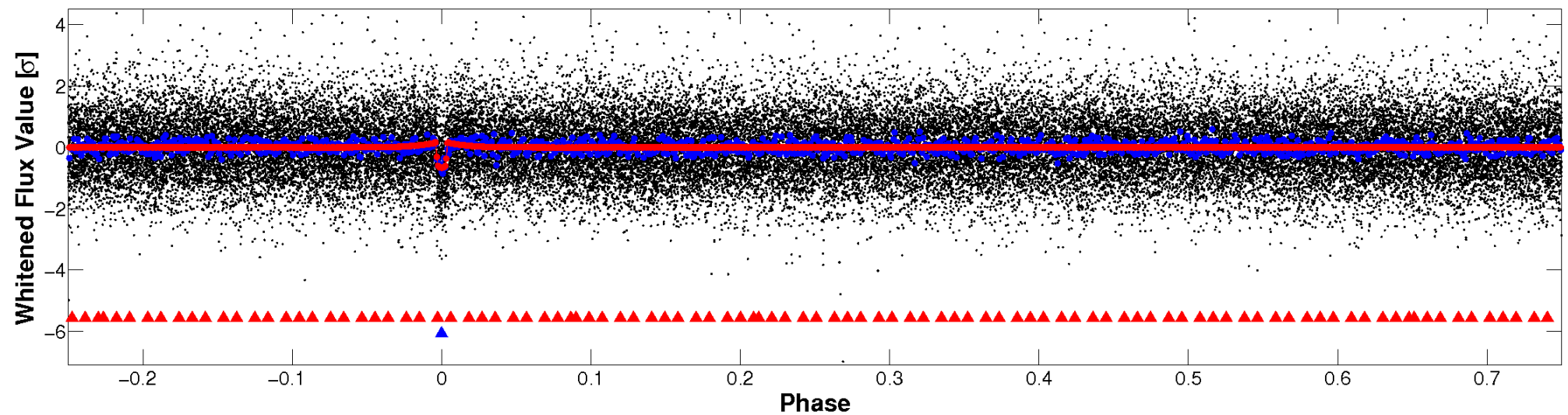


Non-Whitened Vs. Whitened Light Curve

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

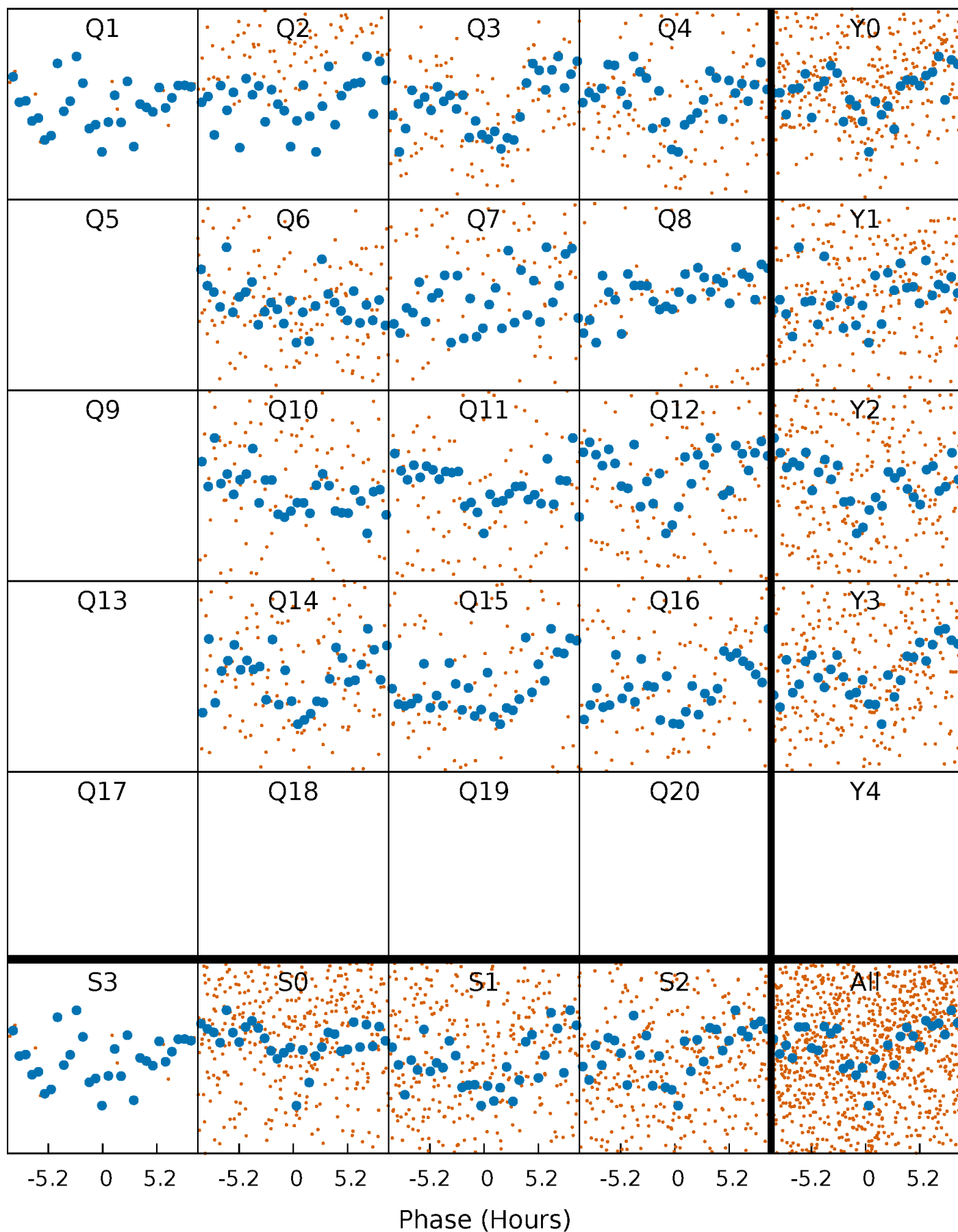


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



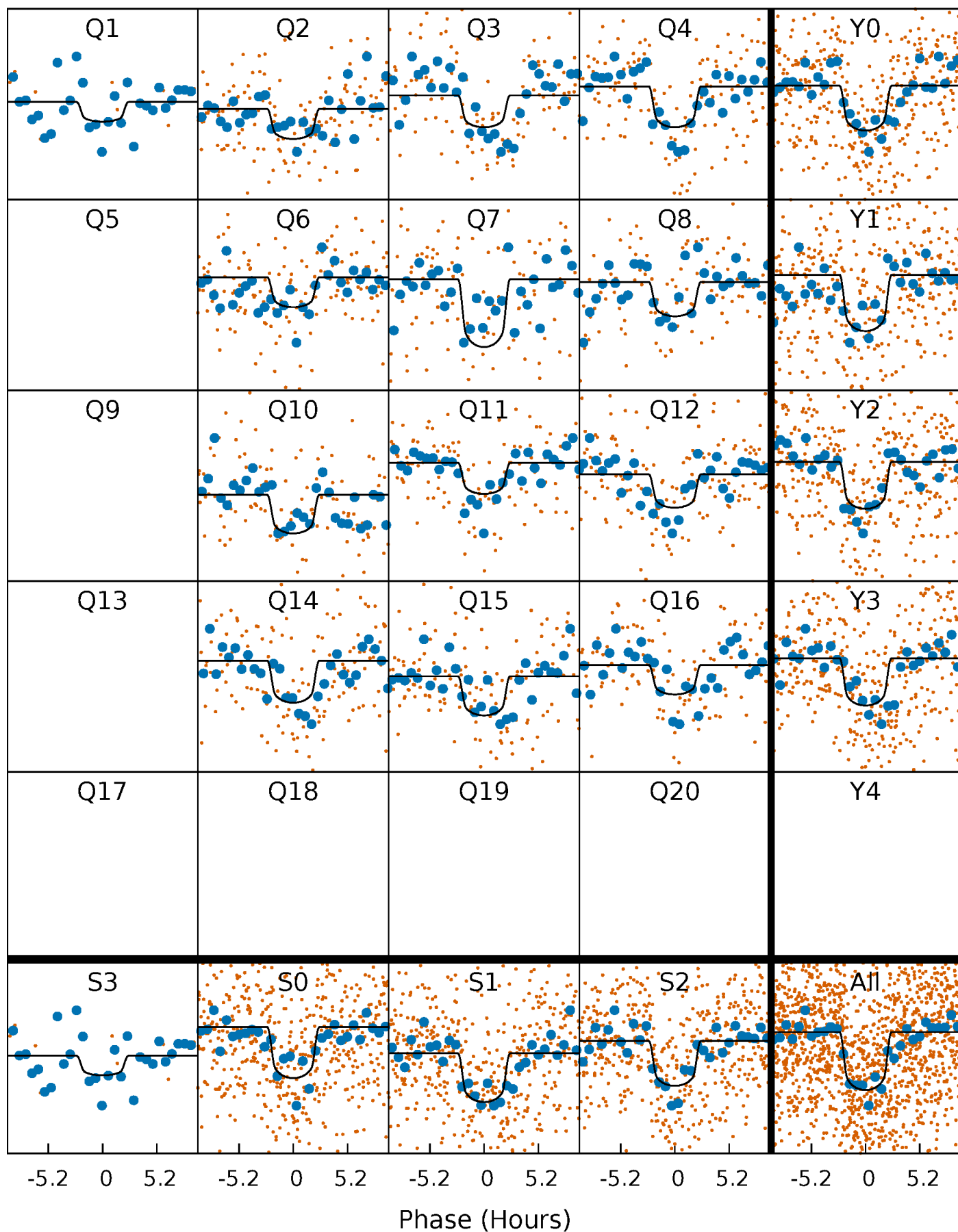
PDC Quarter-Phased Transit Curves

TCE 006347299-02 P= 25.661459 Days $T_0=155.137340$ (BKJD)



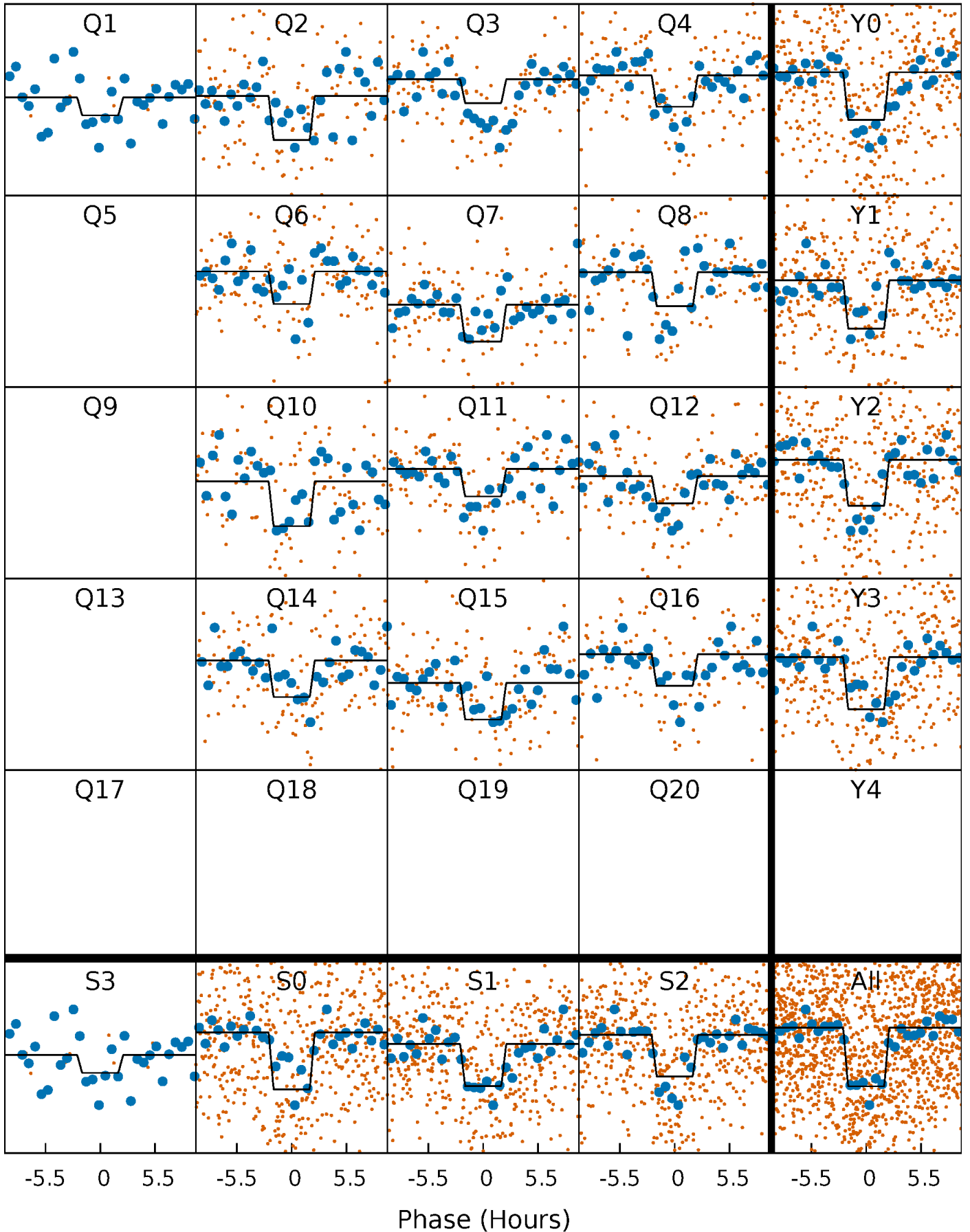
DV Quarter-Phased Transit Curves

TCE 006347299-02 P= 25.661459 Days $T_0=155.137340$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

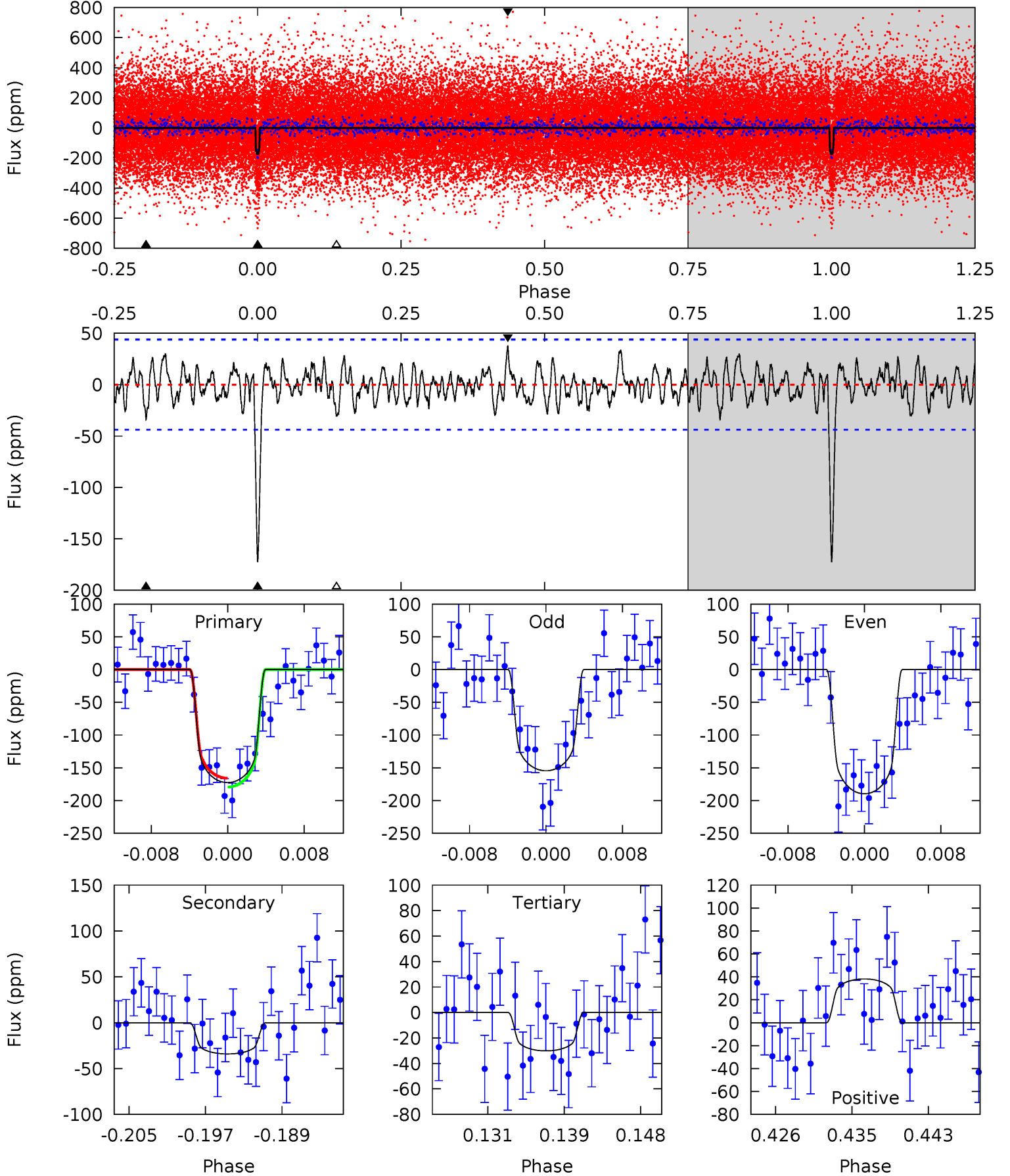
TCE 006347299-02 P= 25.661349 Days $T_0=155.139291$ (BKJD)



DV Model-Shift Uniqueness Test

006347299-02, P = 25.661459 Days, E = 129.475881 Days

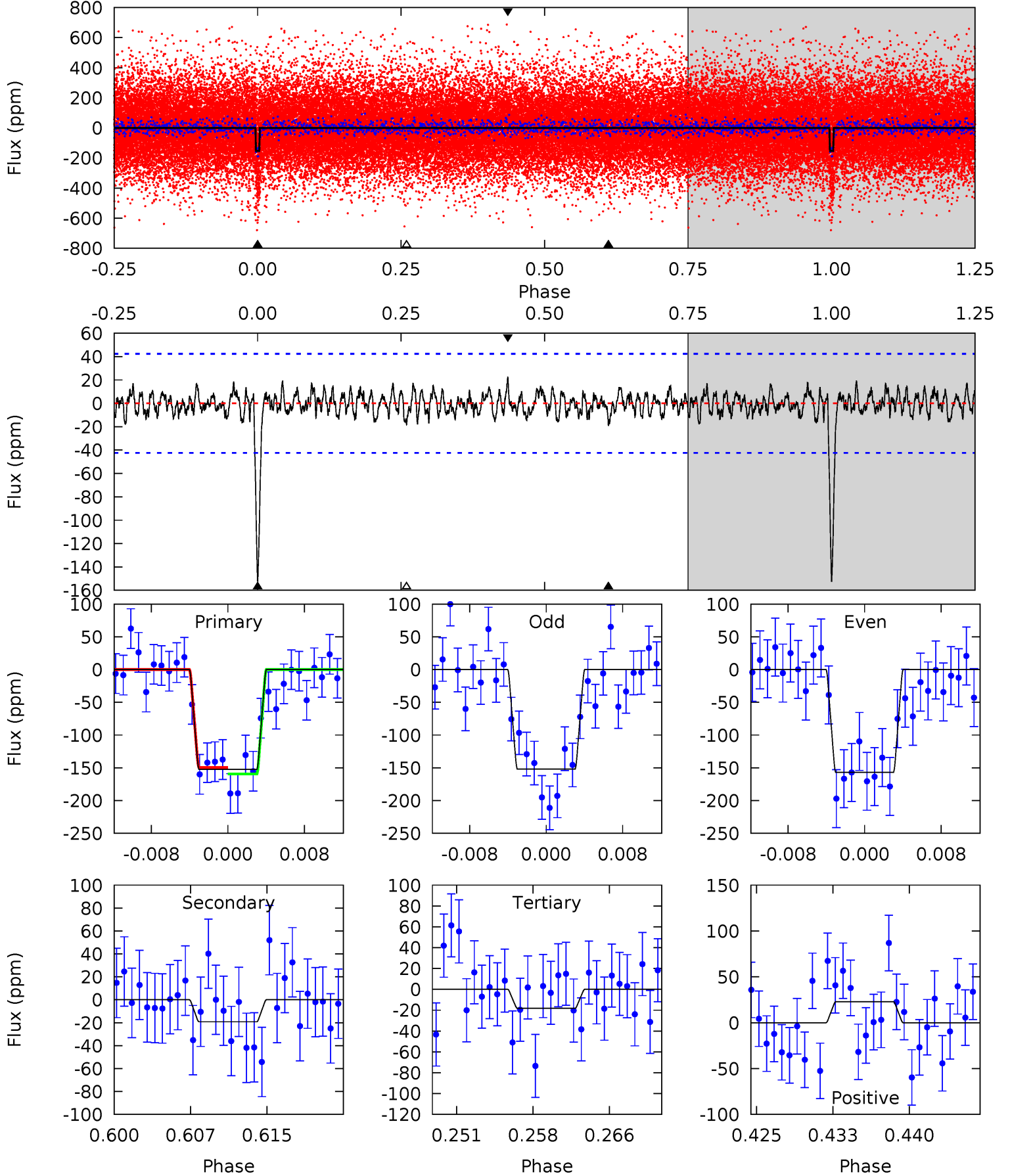
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
19.9	3.94	3.48	4.41	5.06	2.64	1.44	16.4	15.5	0.46	-0.47	2.04	0.97	0.18	0.78



Alt Model-Shift Uniqueness Test

006347299-02, $P = 25.661349$ Days, $E = 129.477942$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.3	2.30	2.18	2.73	5.08	2.67	0.88	16.1	15.5	0.12	-0.43	0.30	0.98	0.13	0.60



Stellar Parameters For KIC 006347299

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5815^{+105}_{-117}	$4.270^{+0.156}_{-0.104}$	$-0.020^{+0.150}_{-0.150}$	$1.198^{+0.178}_{-0.198}$	$0.976^{+0.078}_{-0.071}$	$0.799^{+0.585}_{-0.244}$
	+2%/-2%	+4%/-2%	+750%/-750%	+15%/-17%	+8%/-7%	+73%/-31%
Source	SPE58	SPE58	SPE58	DSEP		

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

Secondary Eclipse Parameters for KIC 006347299-02 / KOI 0661.02

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-34 ± 9	$1.86^{+0.57}_{-0.54}$	948^{+46}_{-48}	3971^{+568}_{-334}	149^{+157}_{-64}
Alt.	-19 ± 8	$1.60^{+0.53}_{-0.47}$	953^{+43}_{-50}	3788^{+611}_{-451}	113^{+141}_{-63}

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

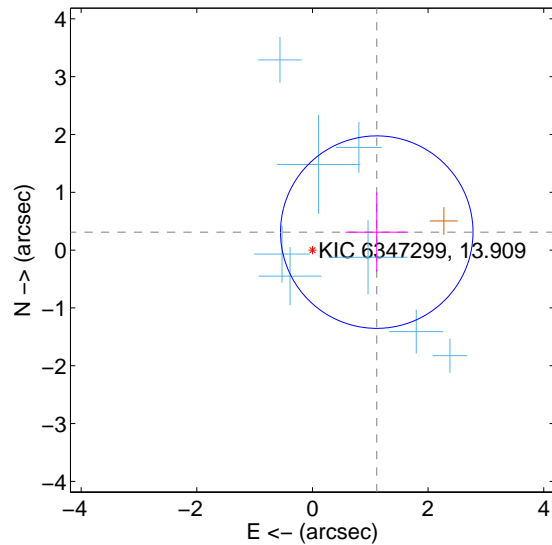
Supplemental centroid analysis for 006347299-02. Kepler magnitude: 13.91. Transit SNR 11.75

There are 8 quarters with good PRF difference image offsets

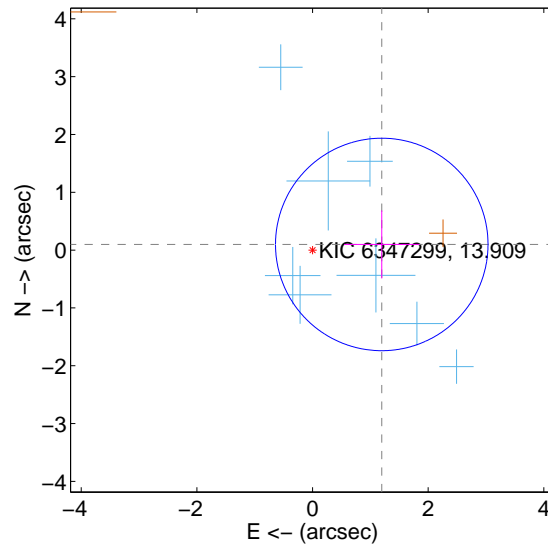
The direct PRF centroid is offset from the target star catalog position by about 0.22 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.155 ± 0.555	2.08	-1.112 ± 0.543	0.311 ± 0.682
PRF-fit source offset from KIC position	1.201 ± 0.612	1.96	-1.197 ± 0.652	0.098 ± 0.588
photometric centroid source offset	1.02 ± 0.82	1.25	-0.80 ± 0.84	-0.64 ± 0.79

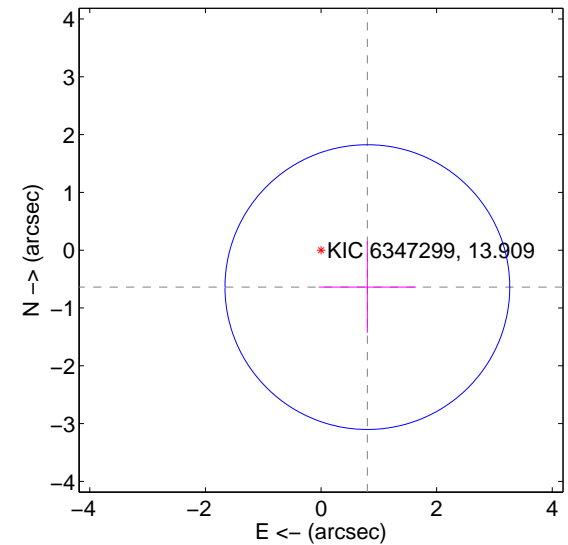
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

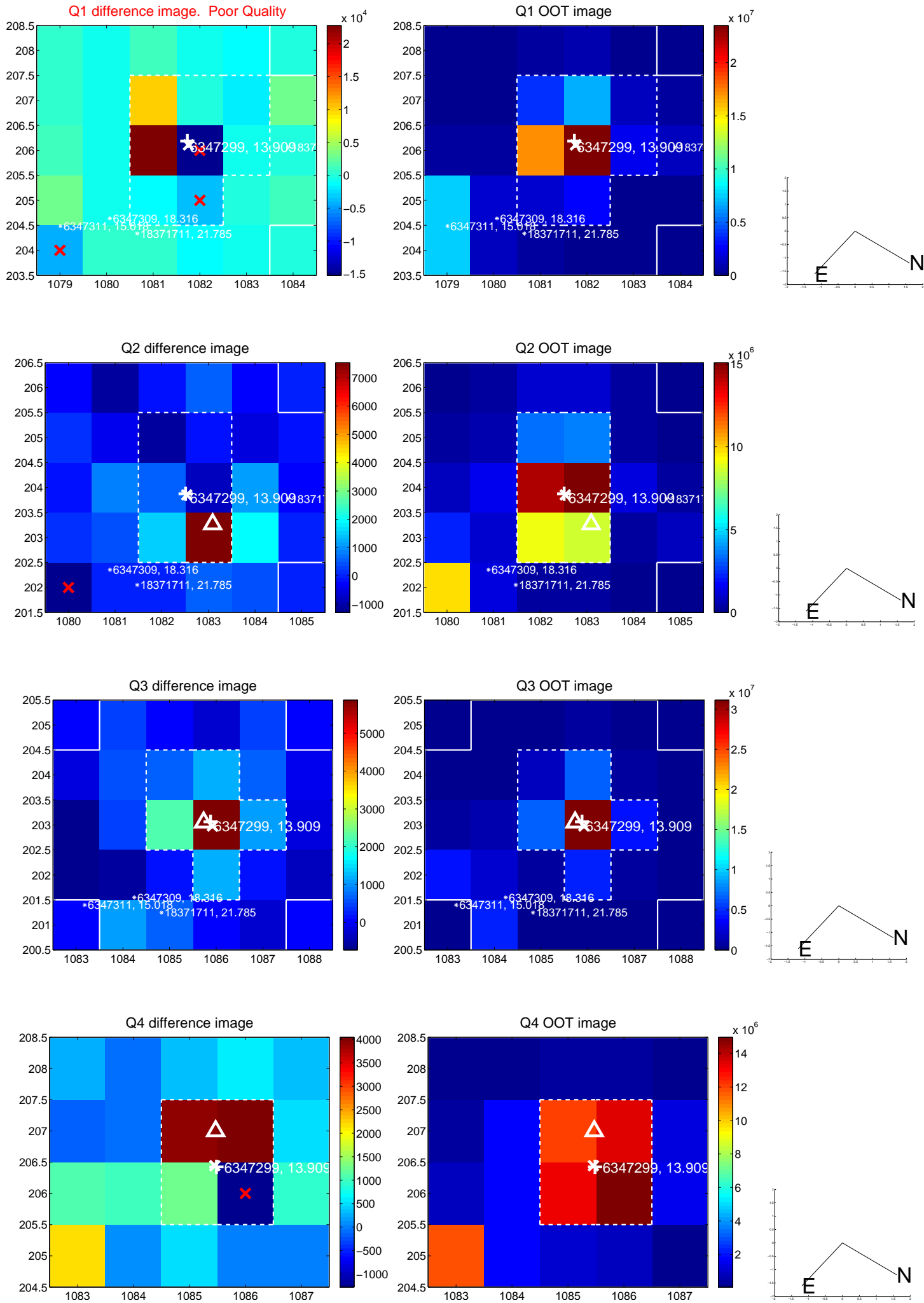


offset from photometric centroids

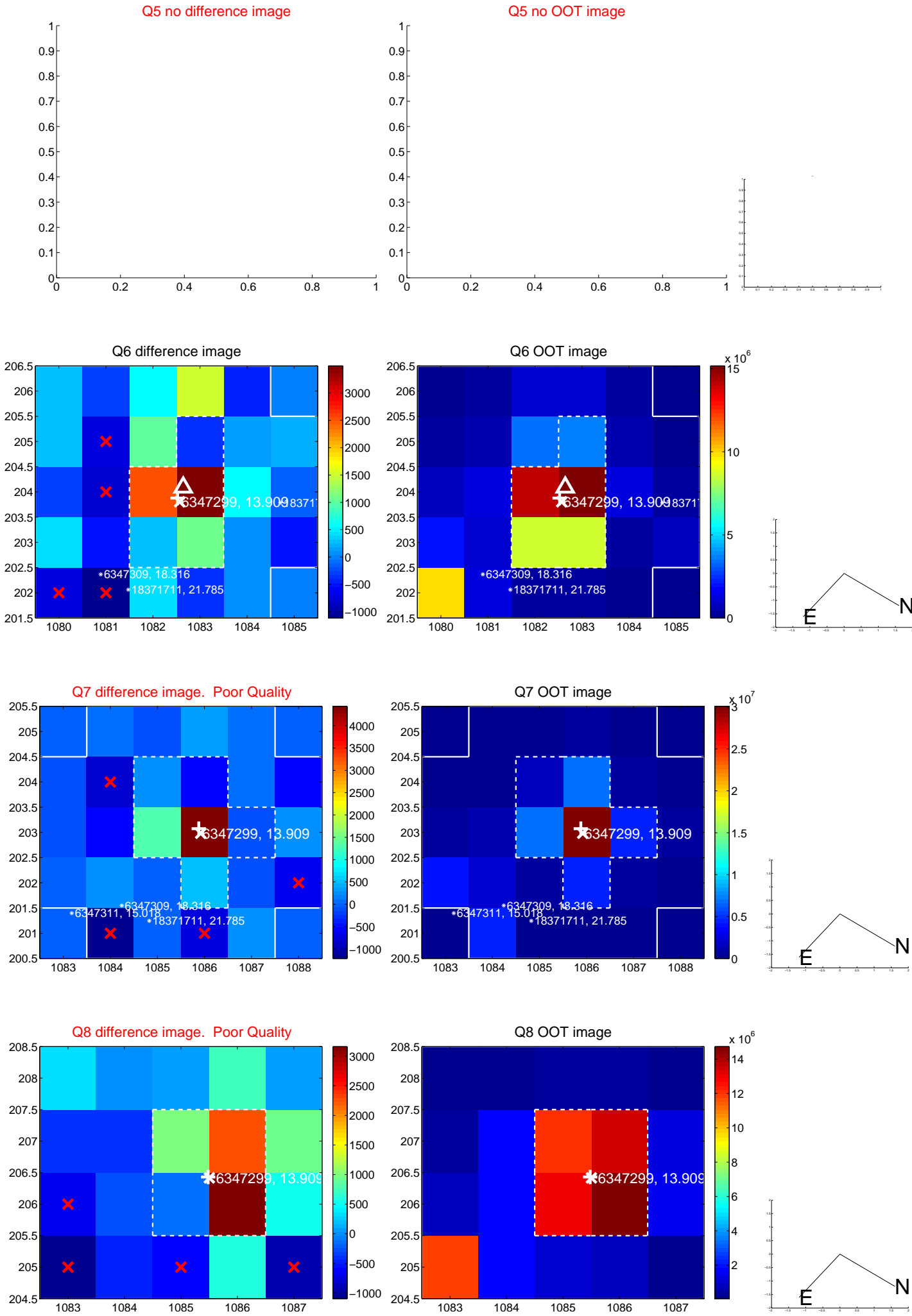


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

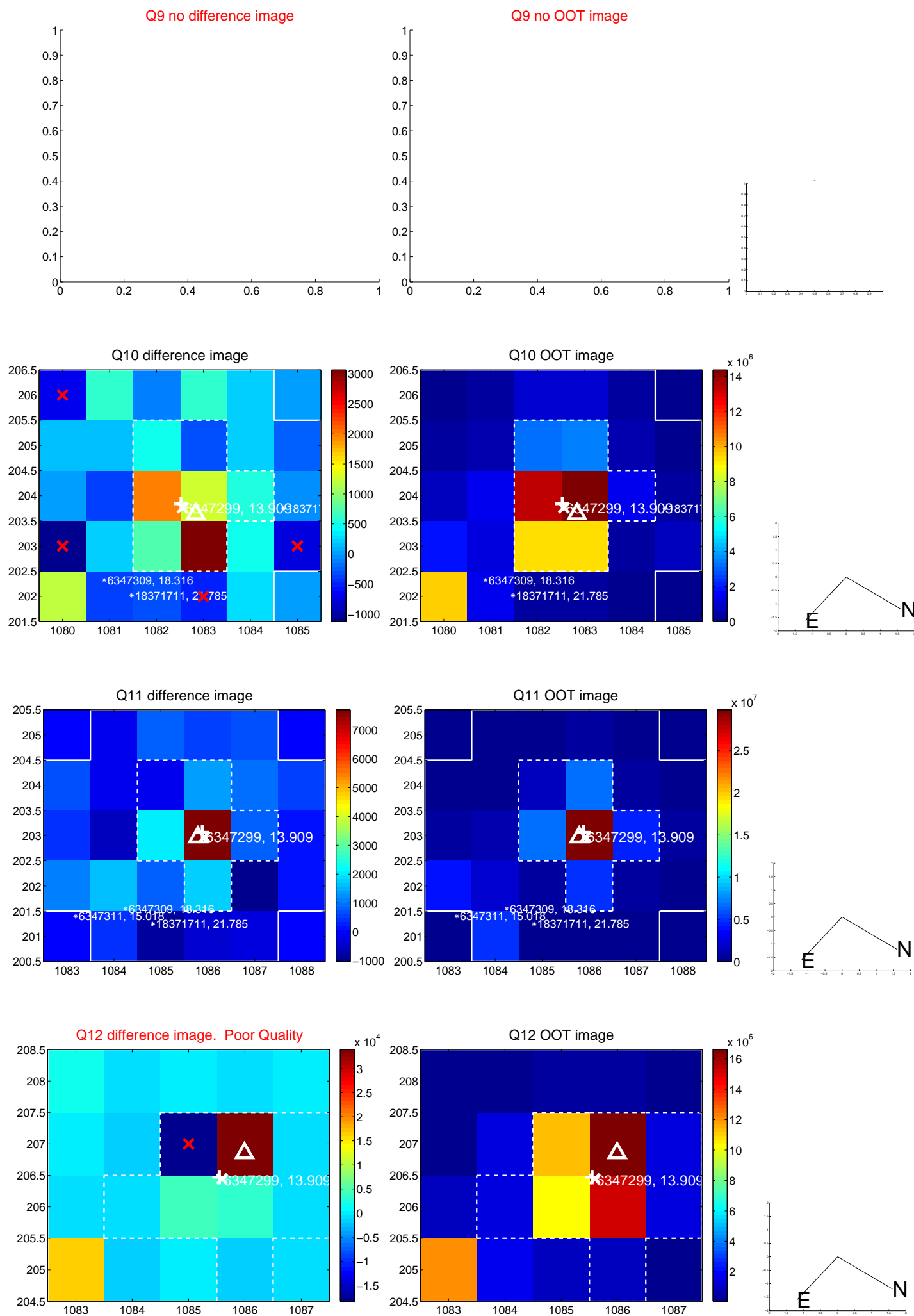
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



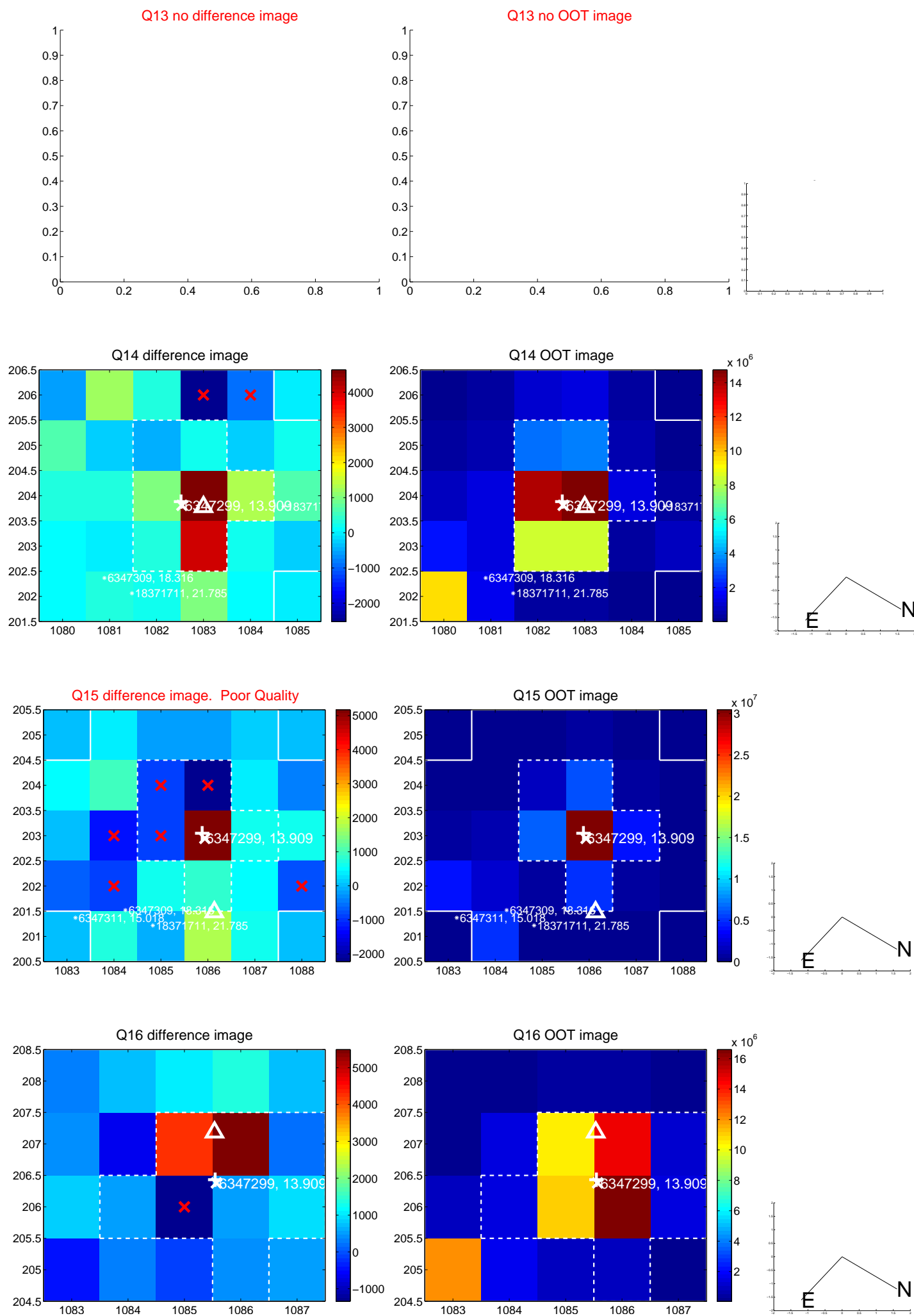
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



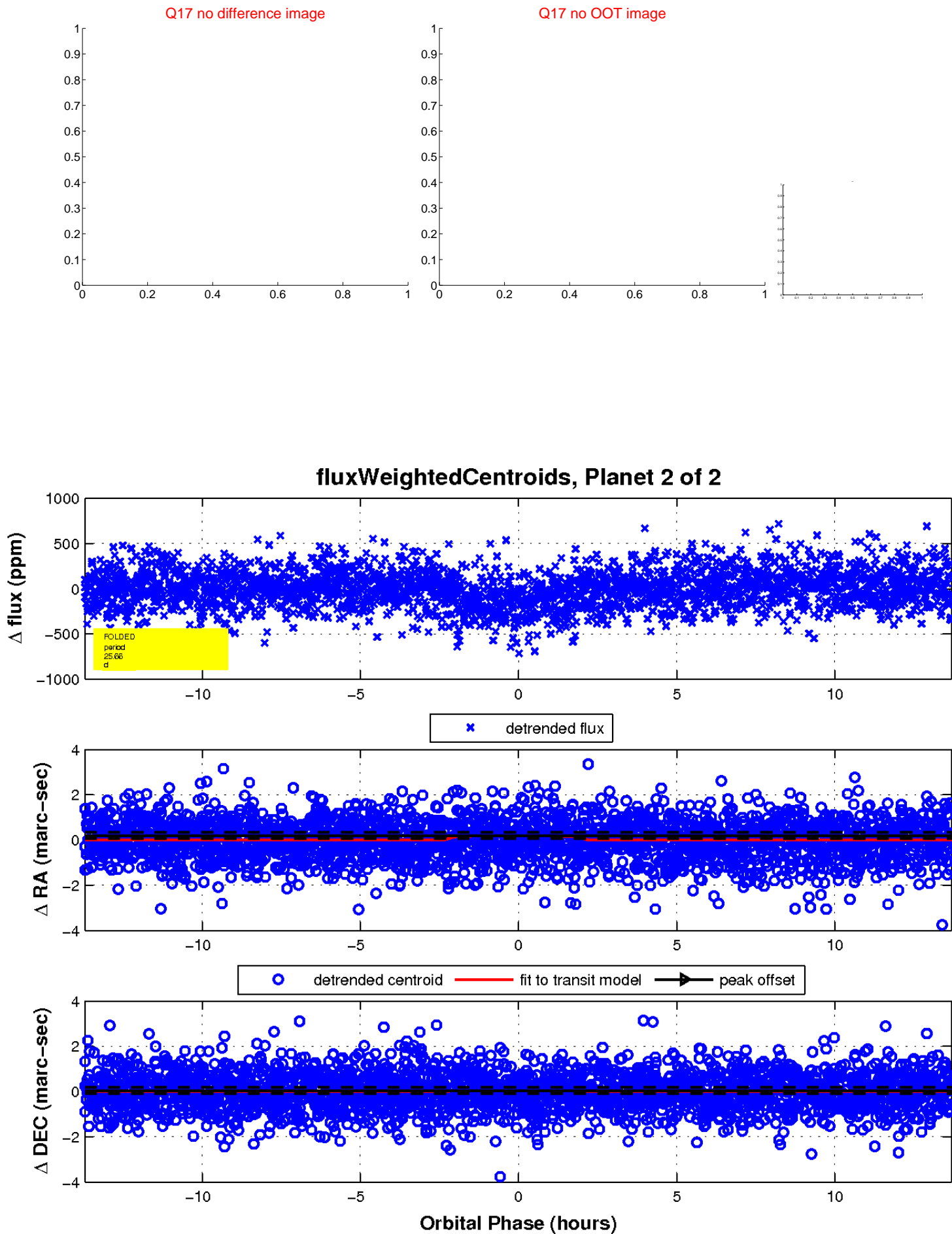
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



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

Declination

