

KIC 004815520

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})
004815520-01	OBS	0367.01	31.578645	145.627768	2123.1	2.175	290.0	282.6	0.99	5733	4.75	24.98

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004815520-01	OBS	PC	1.00	0	0	0	0	CENT_SATURATED

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.

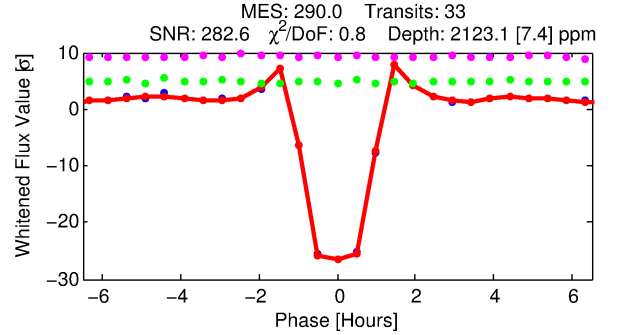
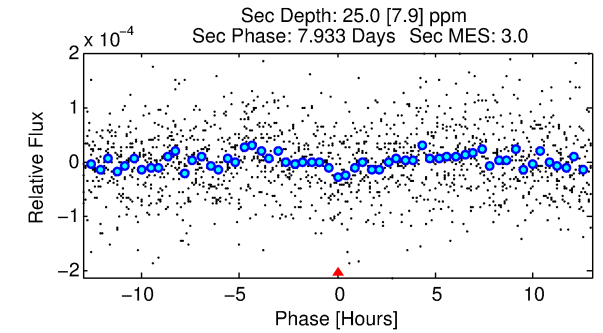
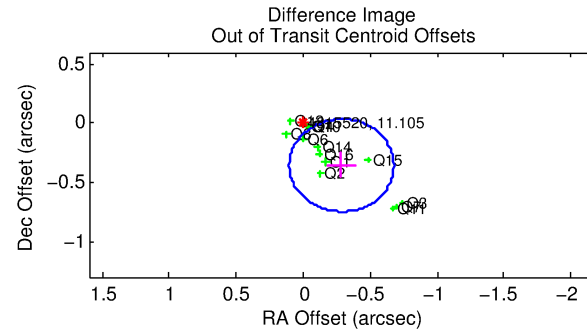
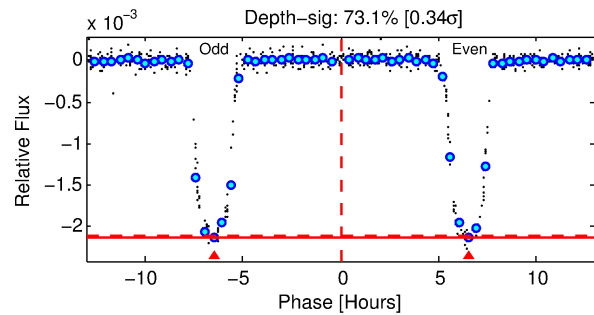
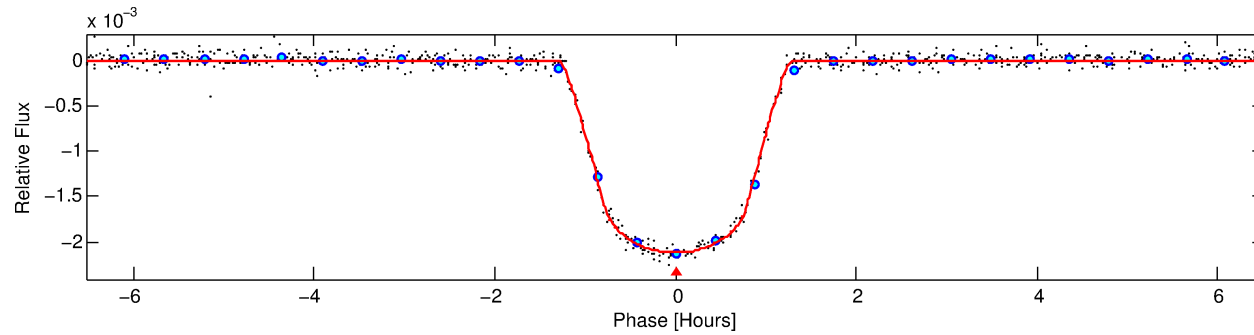
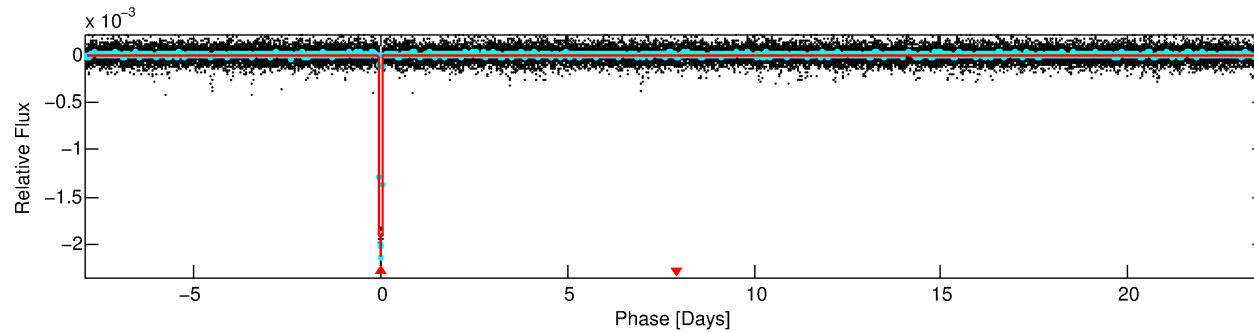
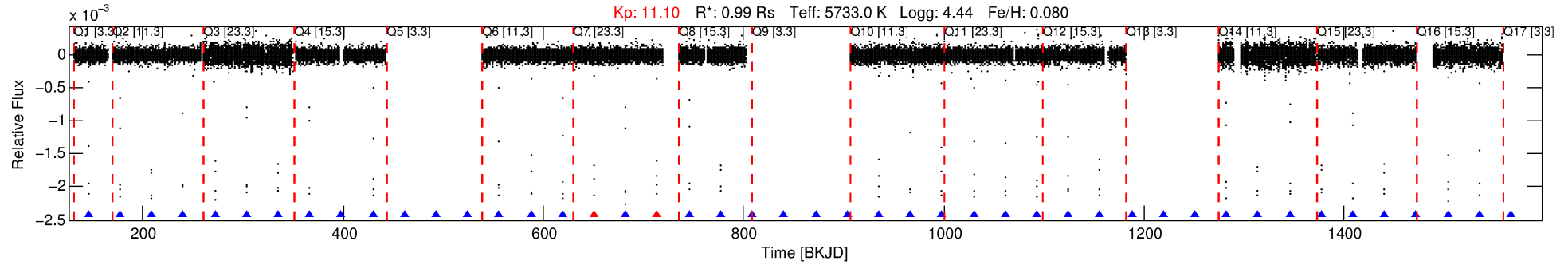
Ephemeris Match Information For 004815520-01

No Significant Match Found

DV One-Page Summary

KIC: 4815520 Candidate: 1 of 1 Period: 31.579 d

KOI: K00367.01 Corr: 0.989



DV Fit Results:

Period = 31.57864 [0.00001] d
Epoch = 145.6278 [0.0001] BKJD
 $R_p/R^* = 0.0439$ [0.0012]
 $a/R^* = 95.14$ [11.26]
 $b = 0.60$ [0.13]
 $S_{\text{eff}} = 24.98$ [5.52]
 $T_{\text{eq}} = 570$ [31] K
 $R_p = 4.75$ [0.73] R_{e}
 $a = 0.1949$ [0.0262] AU
 $A_g = 23.17$ [8.85] [2.50 σ]
 $T_{\text{eff}} = 1934$ [160] K [8.34 σ]

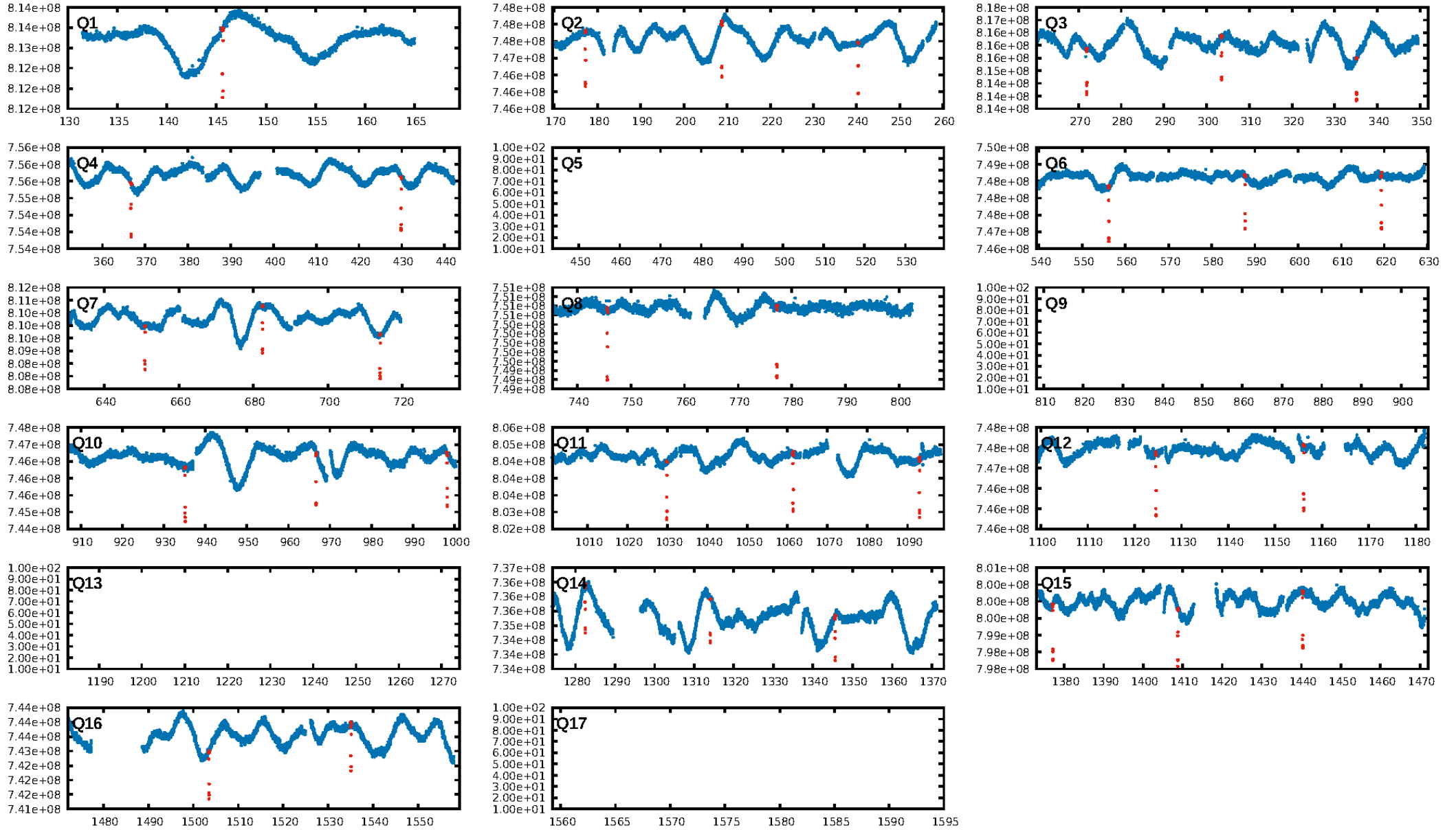
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 95.5%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 0.94 [30/32]
GhostDiagnostic-chr: 9.478
Centroid-sig: 17.6%
Centroid-so: 0.416 arcsec [11.34 σ]
OotOffset-rm: 0.457 arcsec [3.50 σ]
KicOffset-rm: 0.208 arcsec [1.71 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]

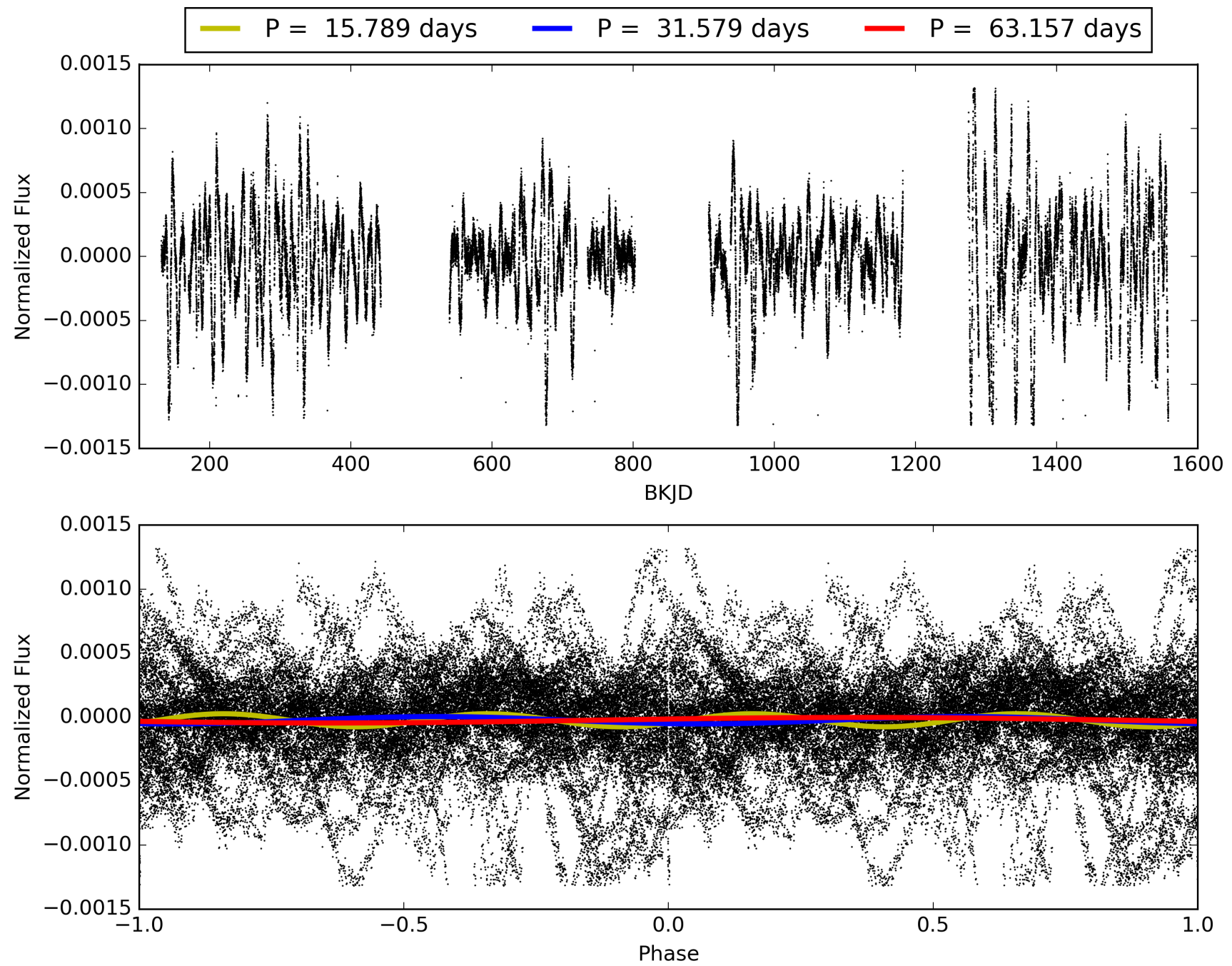
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 23:32:18 Z

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

TCE 004815520-01, PDC Light Curves

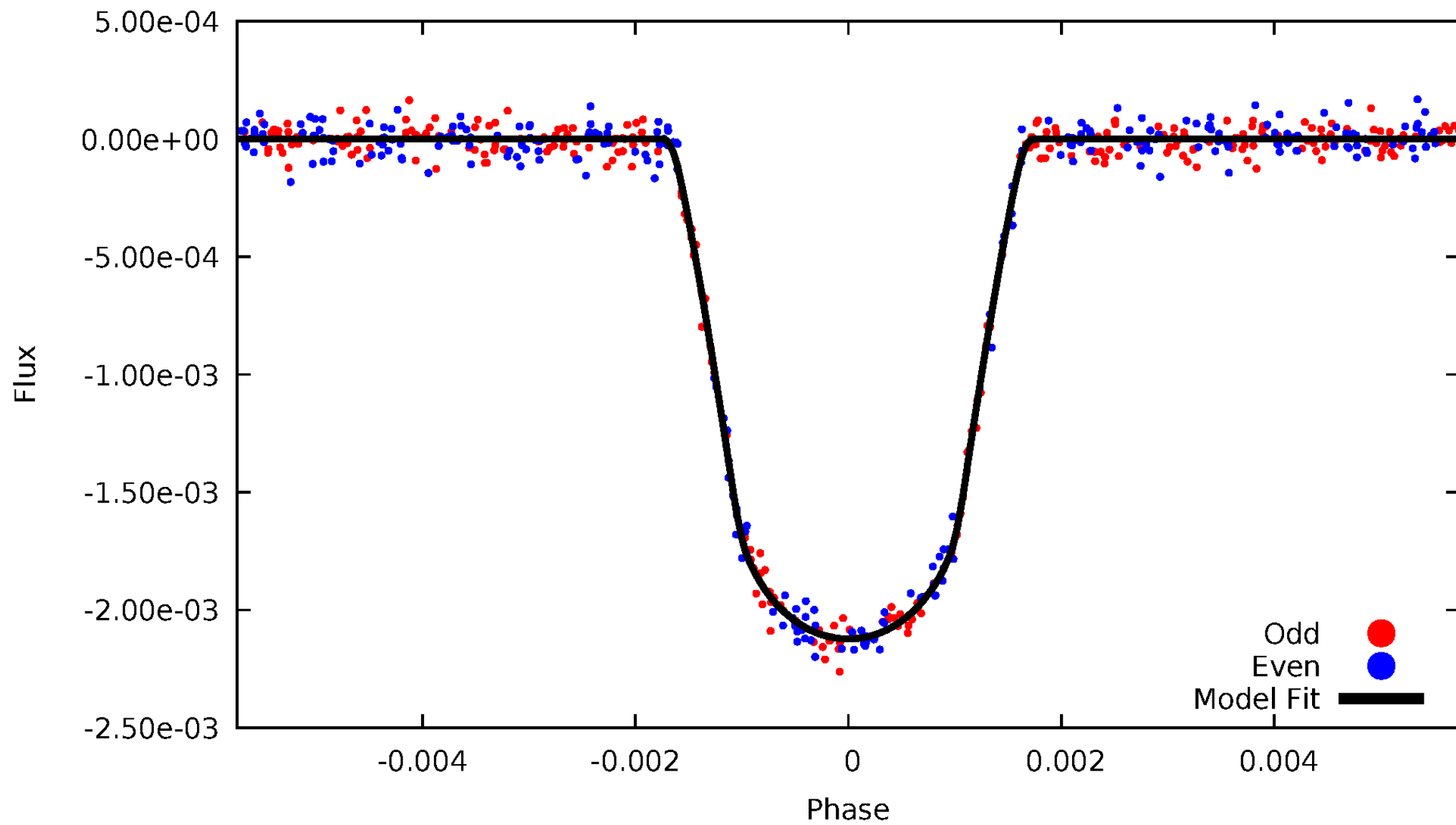


TCE 004815520-01



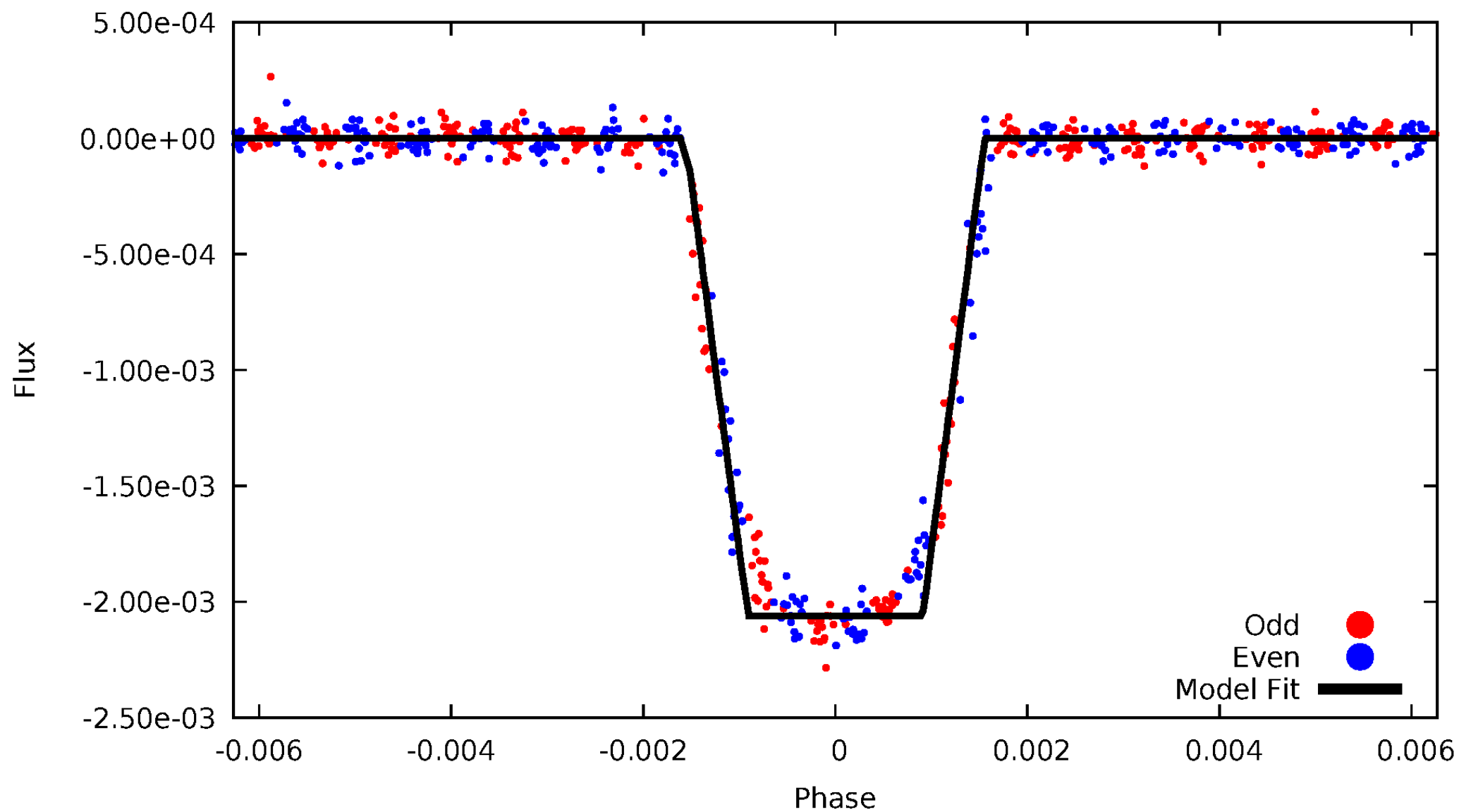
DV Odd/Even

TCE 004815520-01



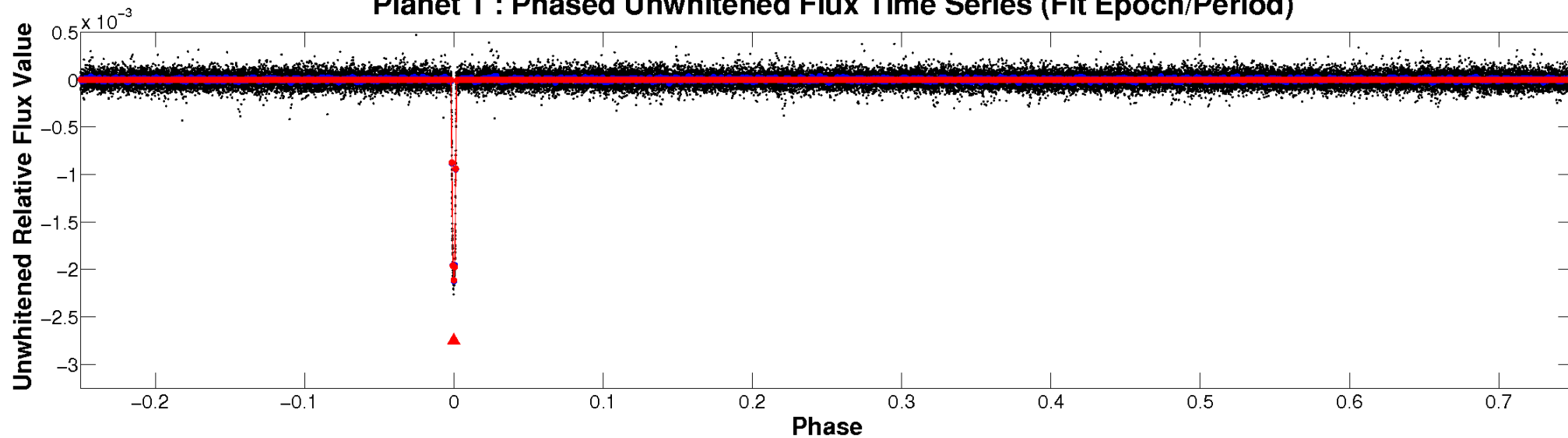
ALT Odd/Even

TCE 004815520-01

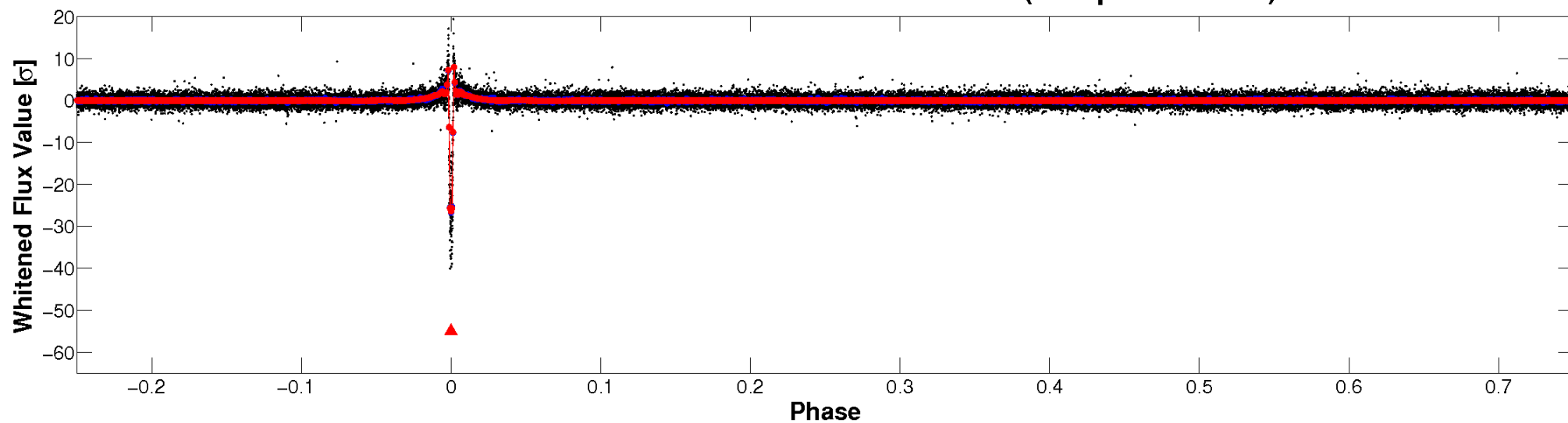


Non-Whitened Vs. Whitened Light Curve

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

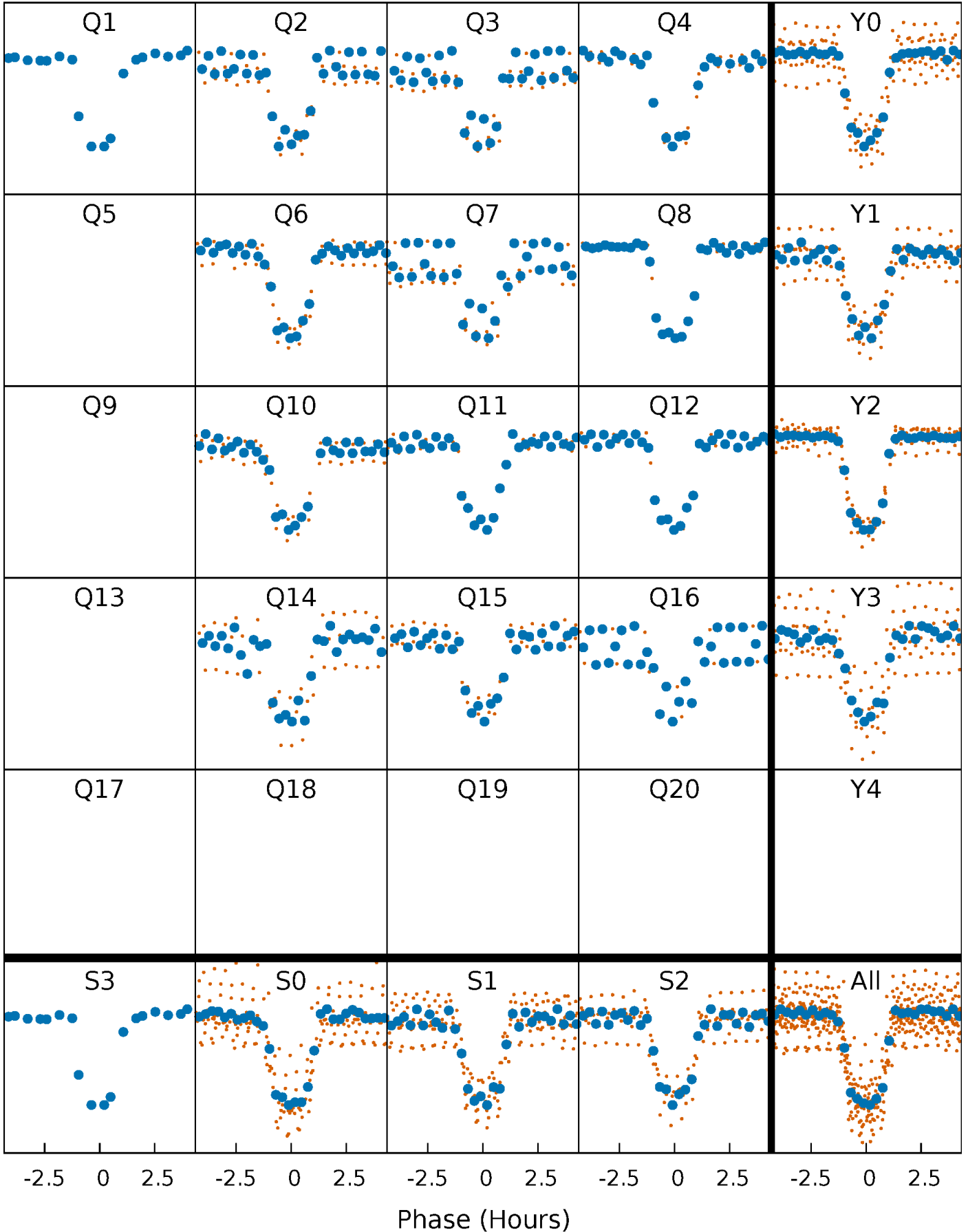


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



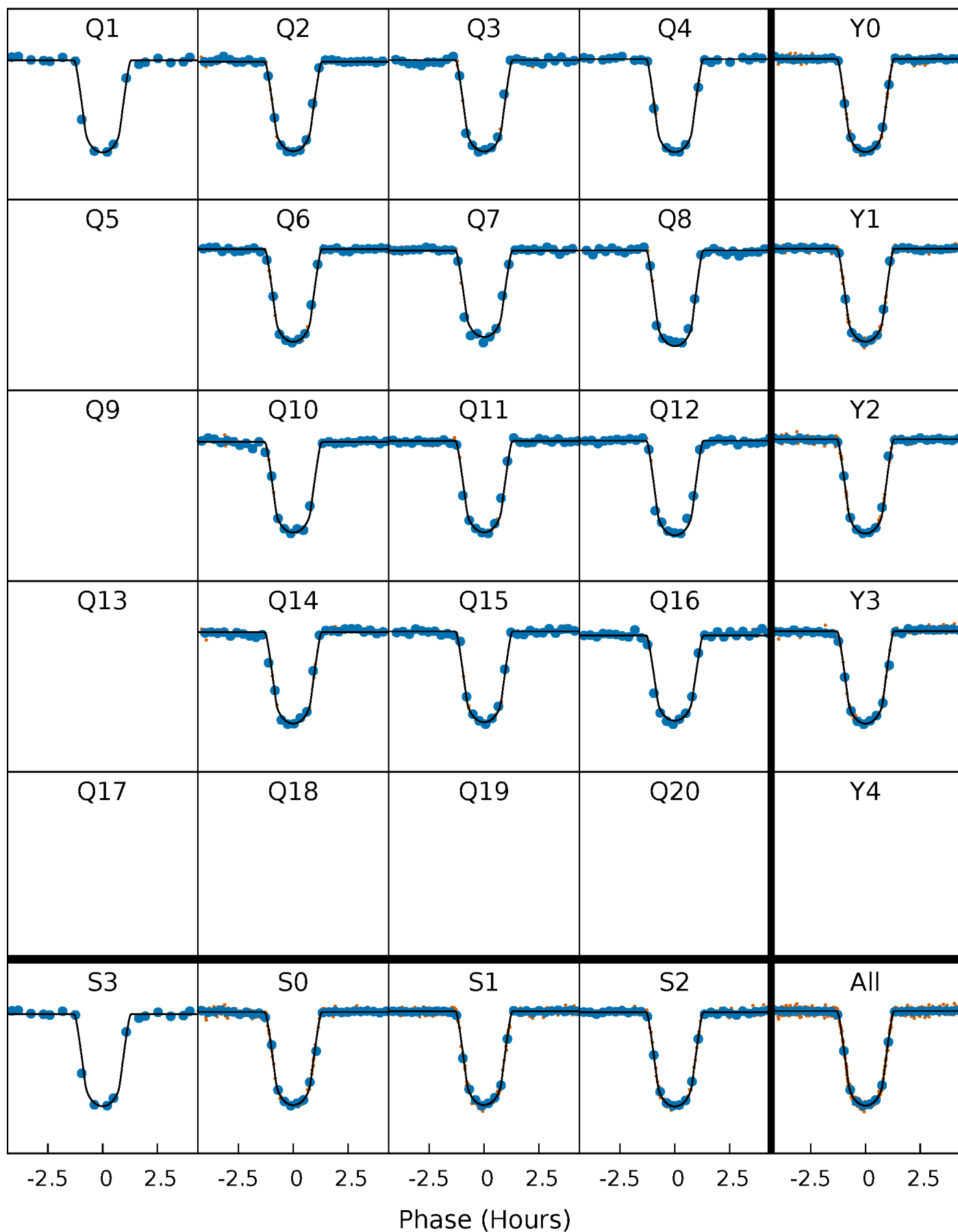
PDC Quarter-Phased Transit Curves

TCE 004815520-01 P= 31.578645 Days $T_0=145.627768$ (BKJD)



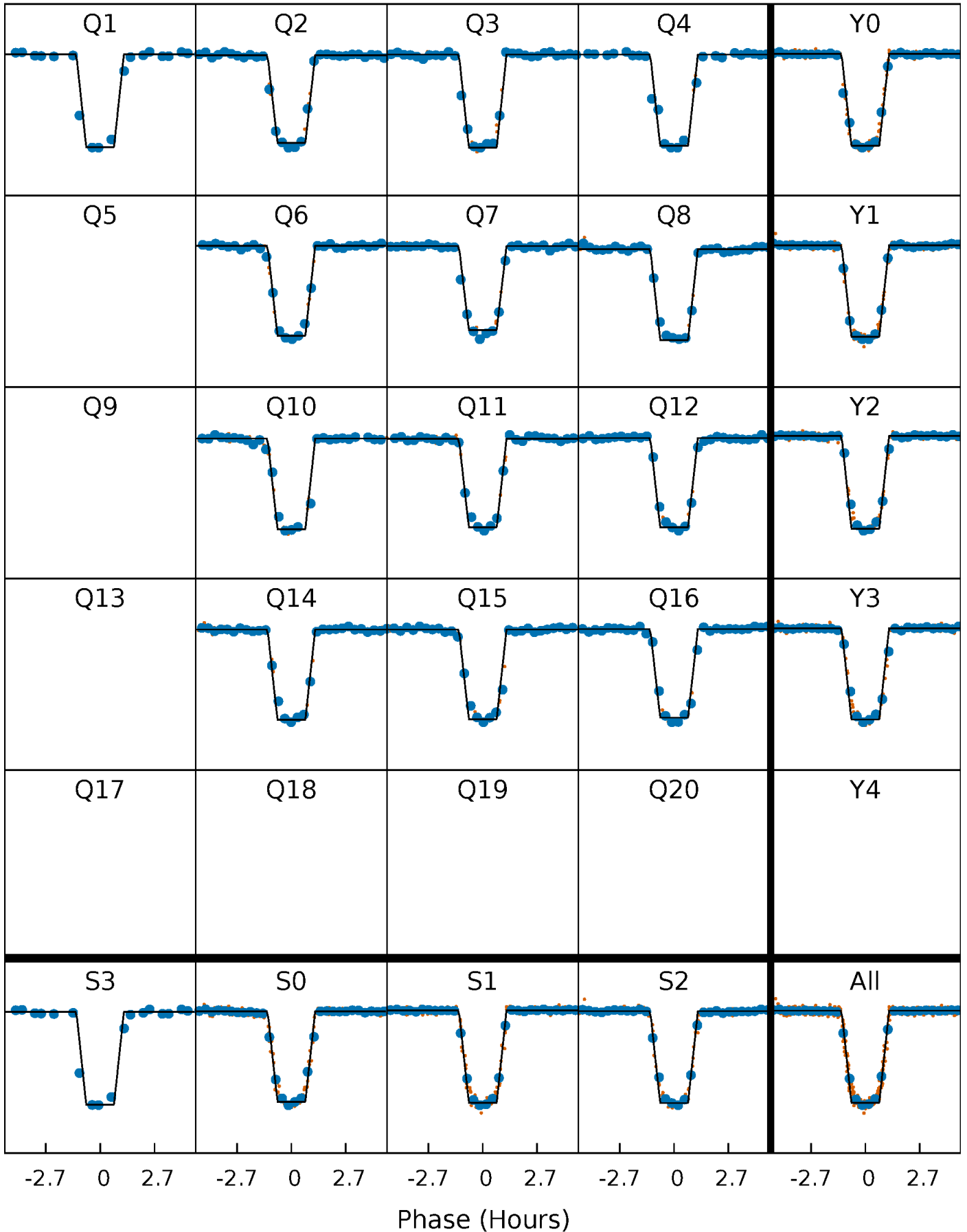
DV Quarter-Phased Transit Curves

TCE 004815520-01 P= 31.578645 Days $T_0=145.627768$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

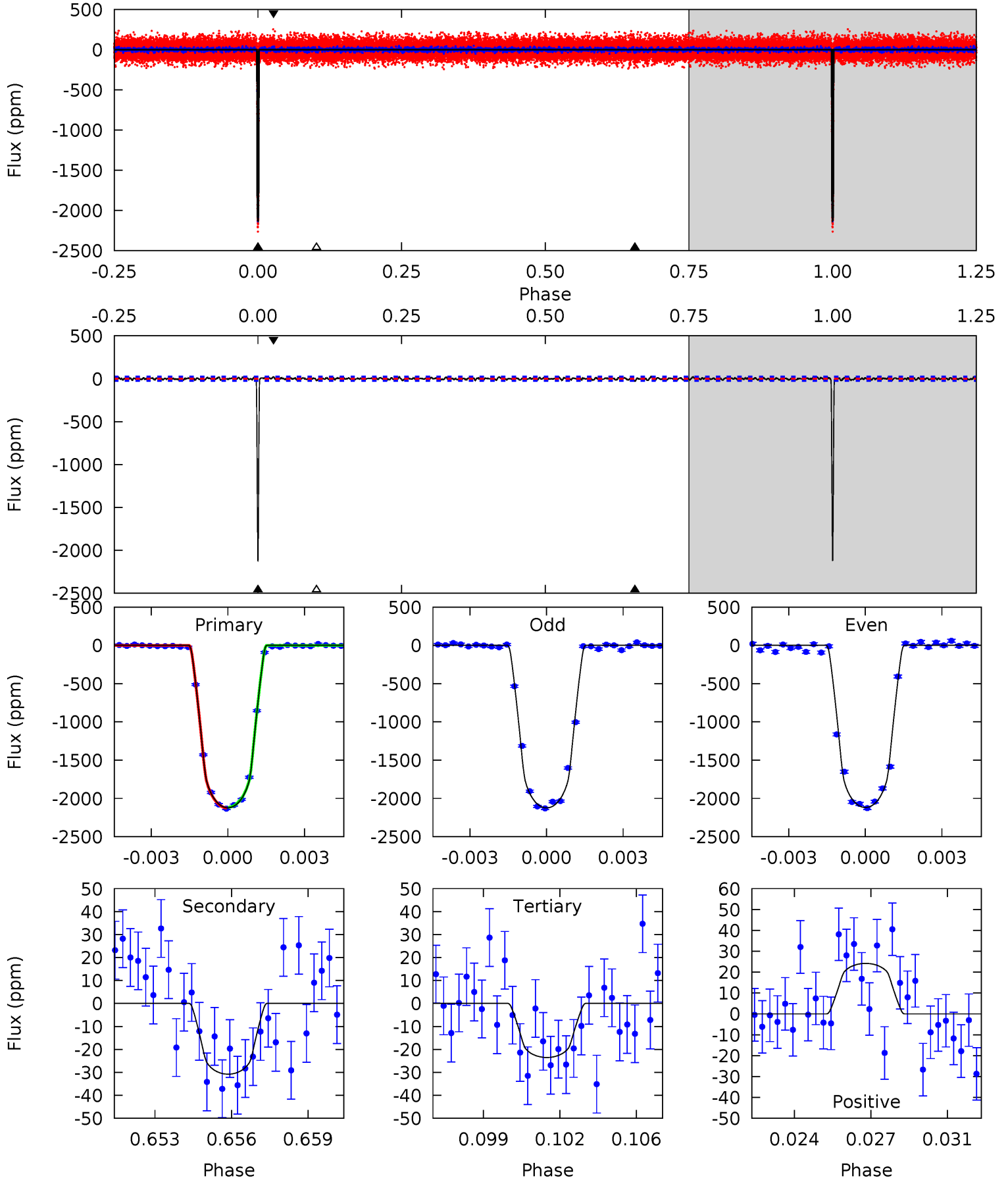
TCE 004815520-01 P= 31.578510 Days $T_0=145.630439$ (BKJD)



DV Model-Shift Uniqueness Test

004815520-01, P = 31.578645 Days, E = 114.049123 Days

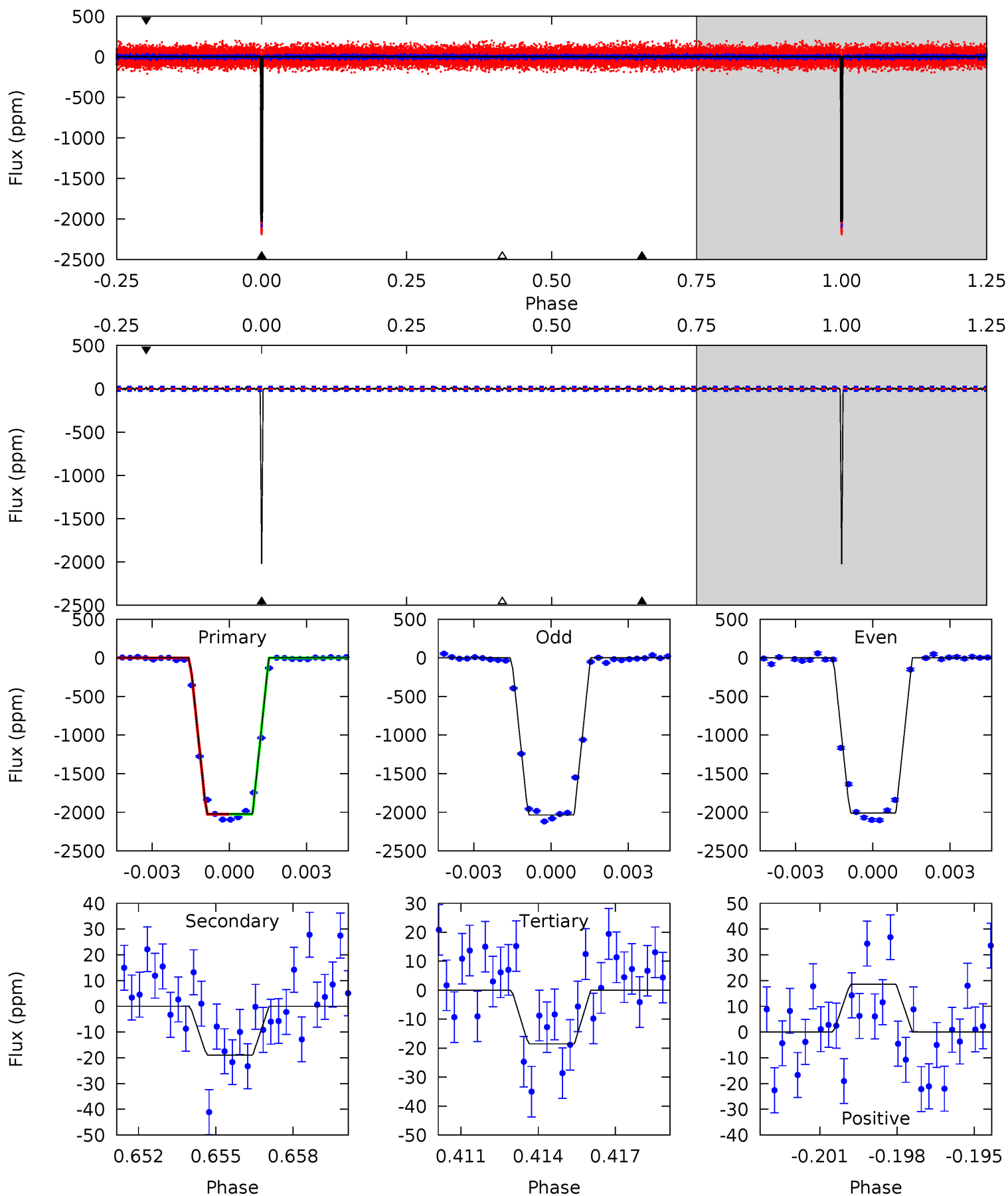
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
463.2	6.72	5.14	5.28	5.23	2.93	1.72	458.1	457.9	1.59	1.44	0.56	1.00	0.01	1.20



Alt Model-Shift Uniqueness Test

004815520-01, $P = 31.578510$ Days, $E = 114.051929$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
448.3	4.20	4.10	4.11	5.25	2.96	1.22	444.2	444.2	0.10	0.09	2.81	1.00	0.01	0.03



Stellar Parameters For KIC 004815520

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5733^{+104}_{-115}	$4.442^{+0.063}_{-0.117}$	$0.080^{+0.150}_{-0.150}$	$0.990^{+0.149}_{-0.080}$	$0.987^{+0.062}_{-0.068}$	$1.434^{+0.348}_{-0.476}$
	+2%/-2%	+1%/-3%	+188%/-188%	+15%/-8%	+6%/-7%	+24%/-33%
Source	SPE59	SPE59	SPE59	DSEP		

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

Secondary Eclipse Parameters for KIC 004815520-01 / KOI 0367.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-31 ± 5	$4.80^{+0.41}_{-0.30}$	802^{+30}_{-26}	2781^{+66}_{-68}	28^{+6}_{-5}
Alt.	-19 ± 5	$4.96^{+0.40}_{-0.34}$	800^{+33}_{-26}	2590^{+79}_{-98}	16^{+5}_{-4}

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

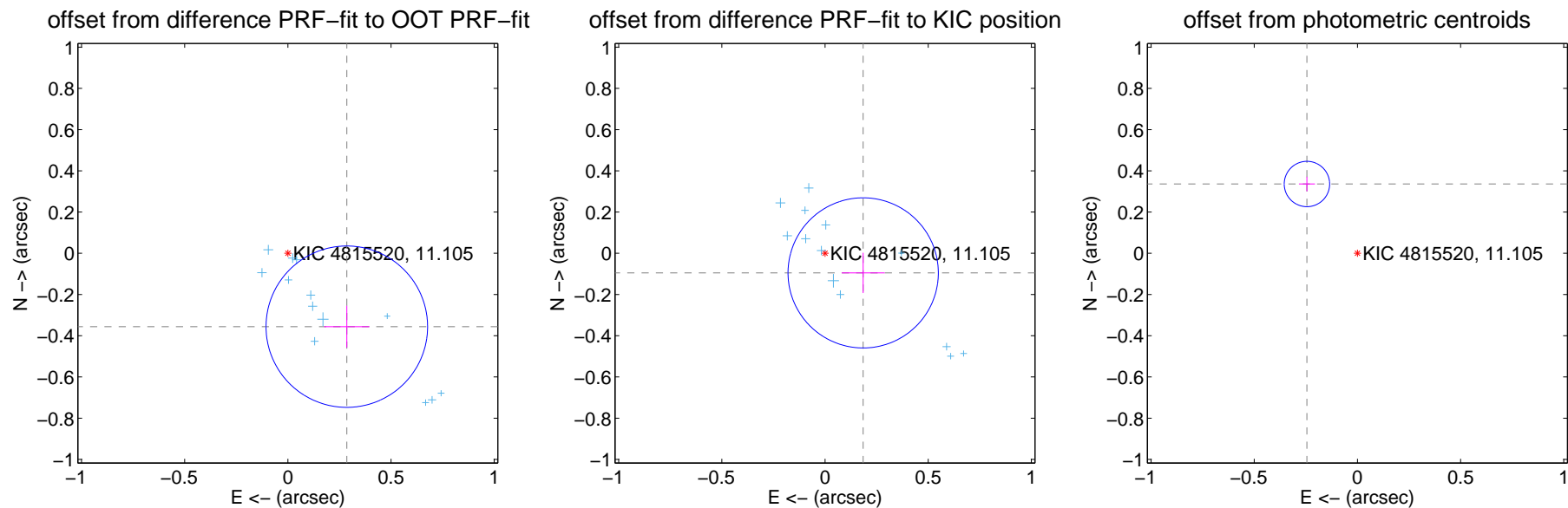
DV Centroid Data

Supplemental centroid analysis for 004815520-01. **Kepler magnitude: 11.11.** Transit SNR 282.59

There are 13 quarters with good PRF difference image offsets

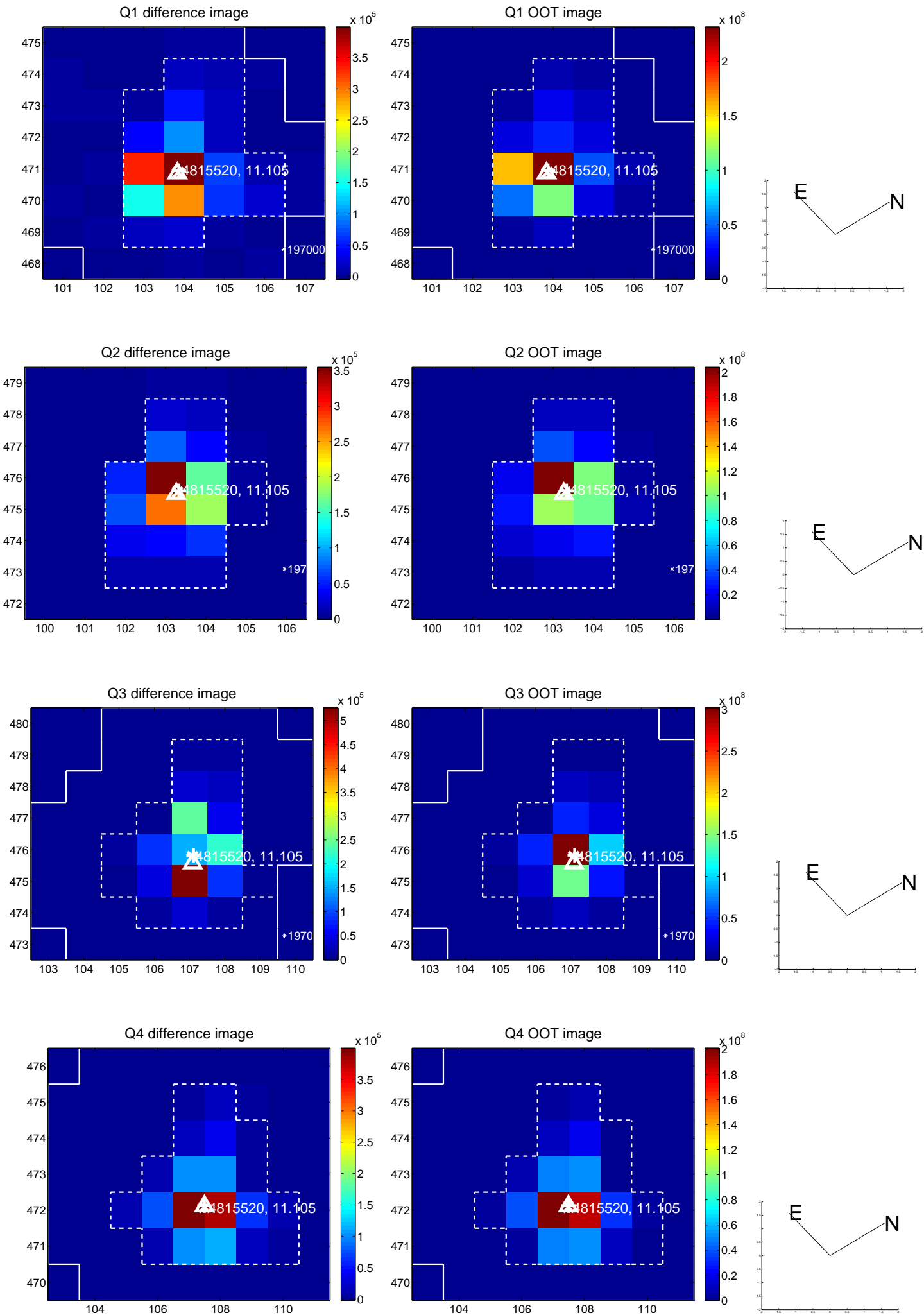
The direct PRF centroid is offset from the target star catalog position by about 0.30 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.457 ± 0.131	3.50	-0.286 ± 0.110	-0.356 ± 0.101
PRF-fit source offset from KIC position	0.208 ± 0.121	1.71	-0.185 ± 0.104	-0.095 ± 0.098
photometric centroid source offset	0.42 ± 0.04	11.34	0.24 ± 0.04	0.34 ± 0.04

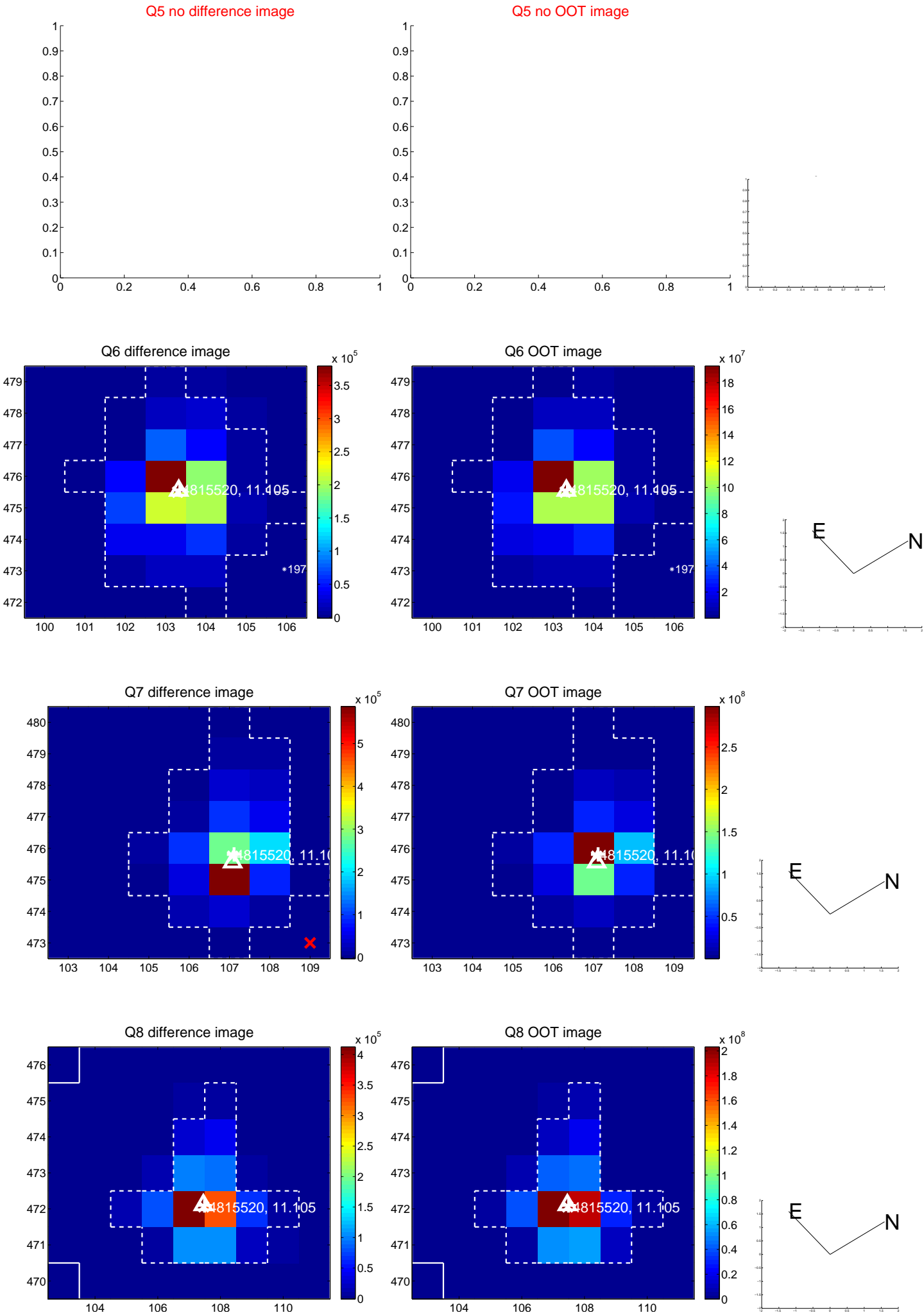


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

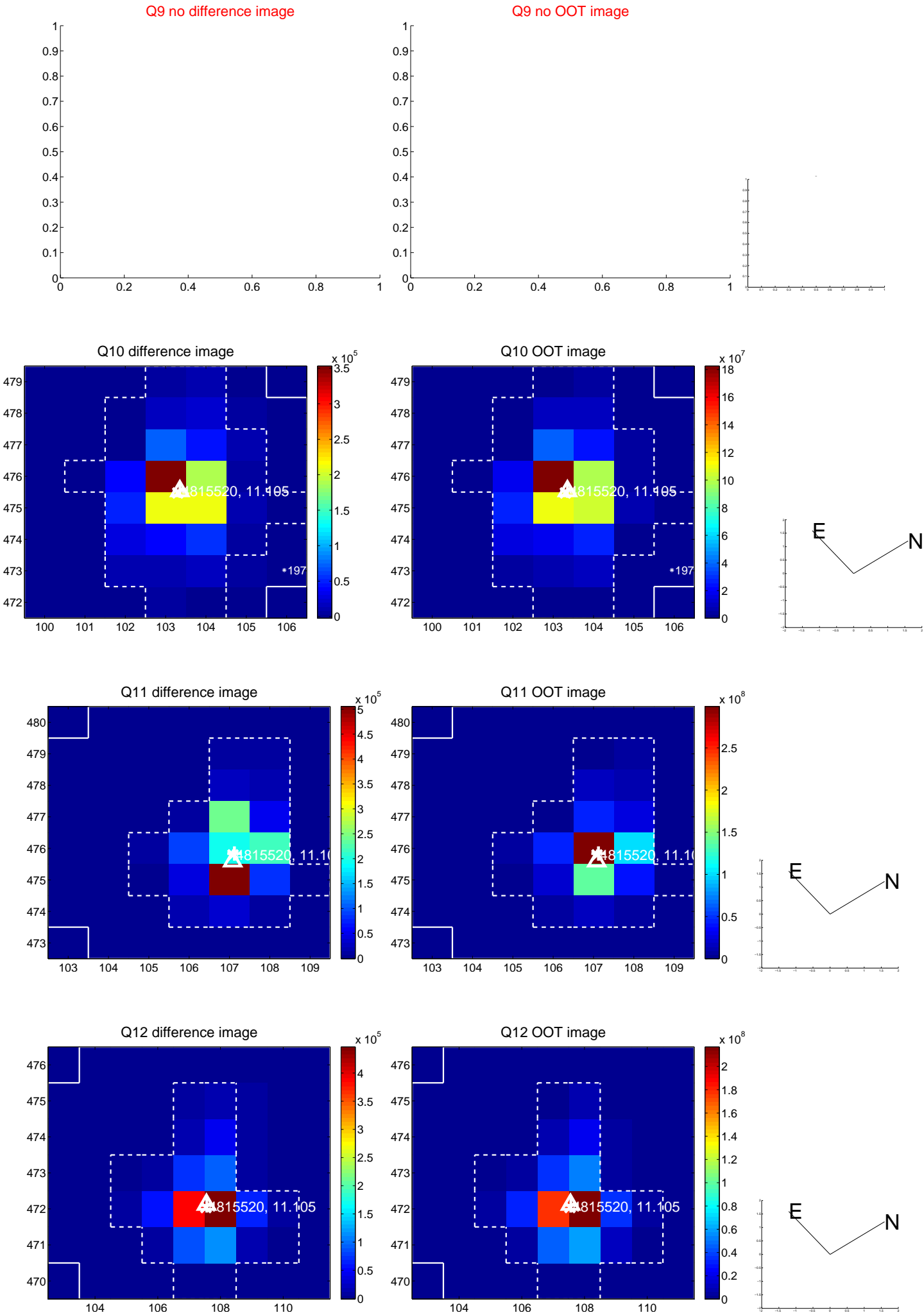
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



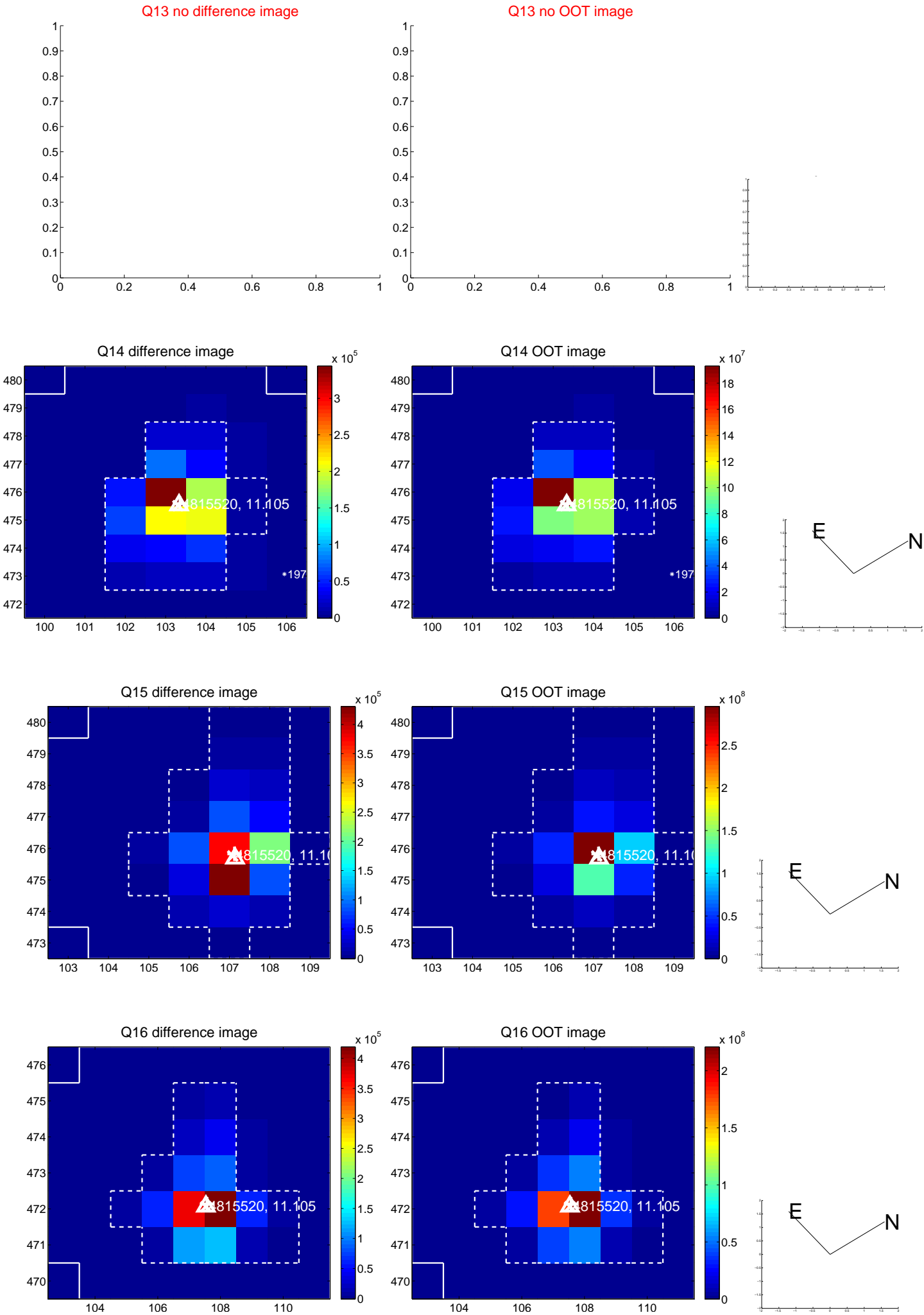
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



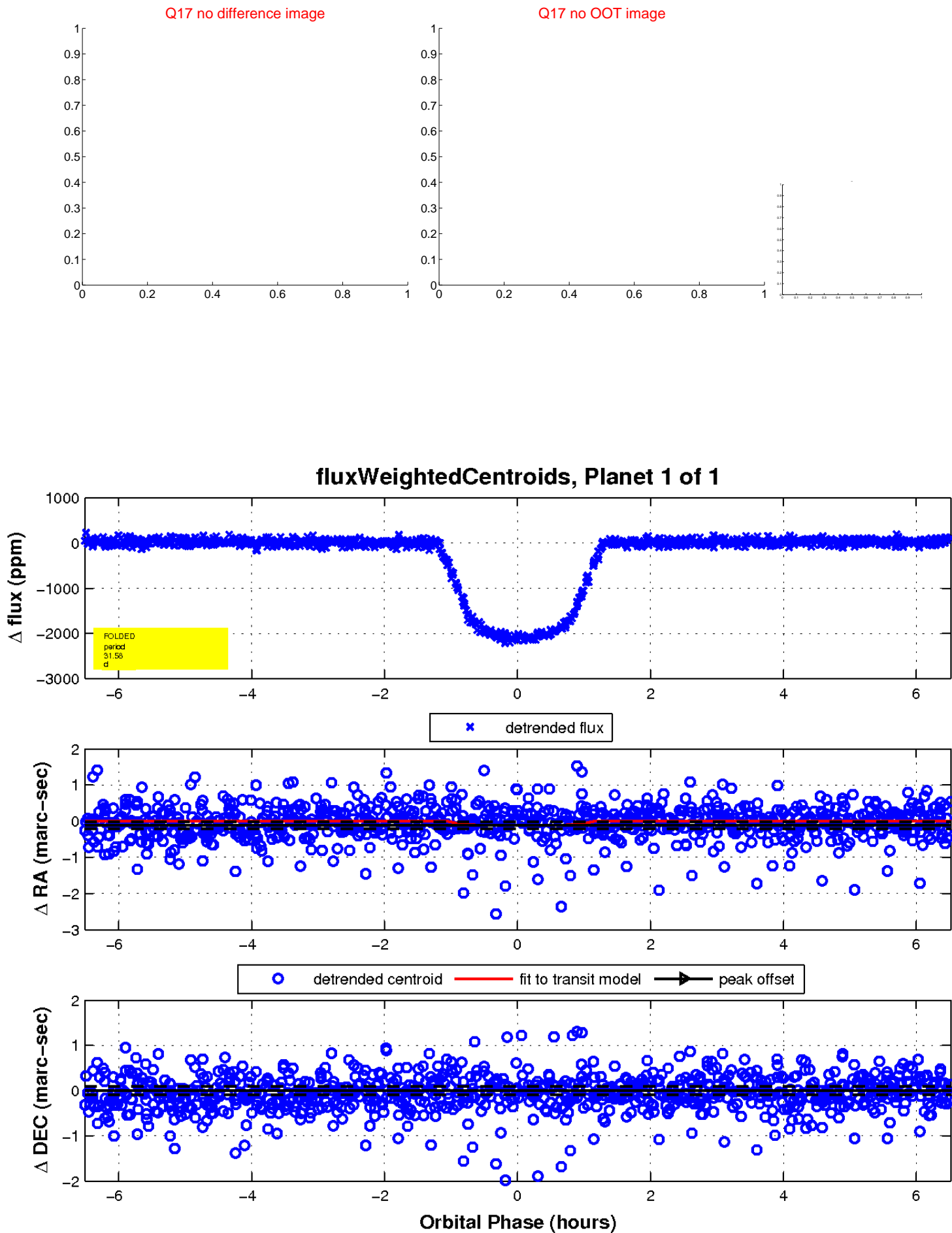
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image

Declination

