

KIC 009589524

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})
009589524-01	OBS	0468.01	22.184297	152.413655	1589.6	3.230	83.2	81.2	0.82	5157	3.68	21.10

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009589524-01	OBS	PC	1.00	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.

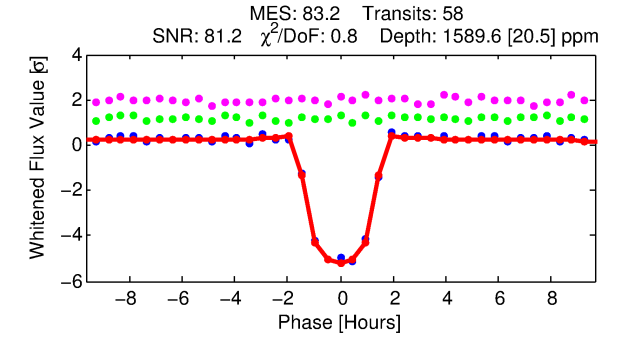
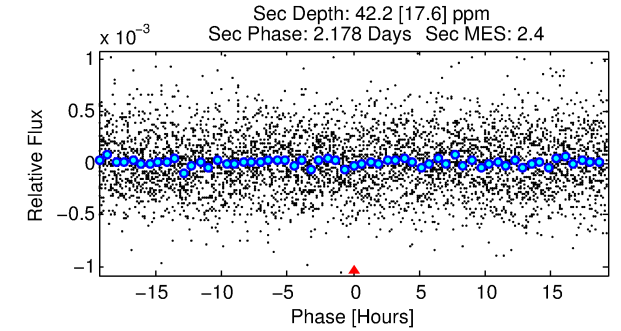
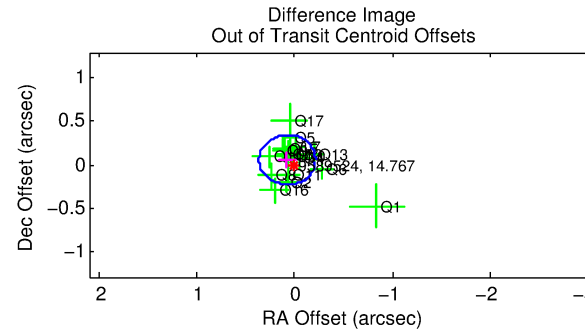
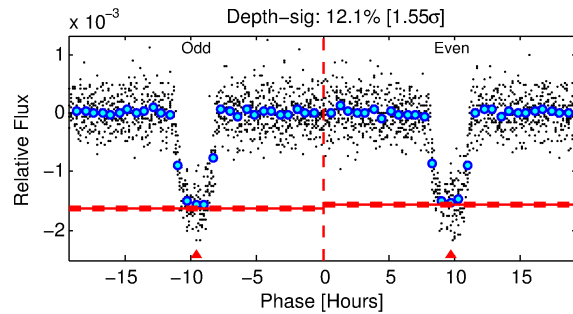
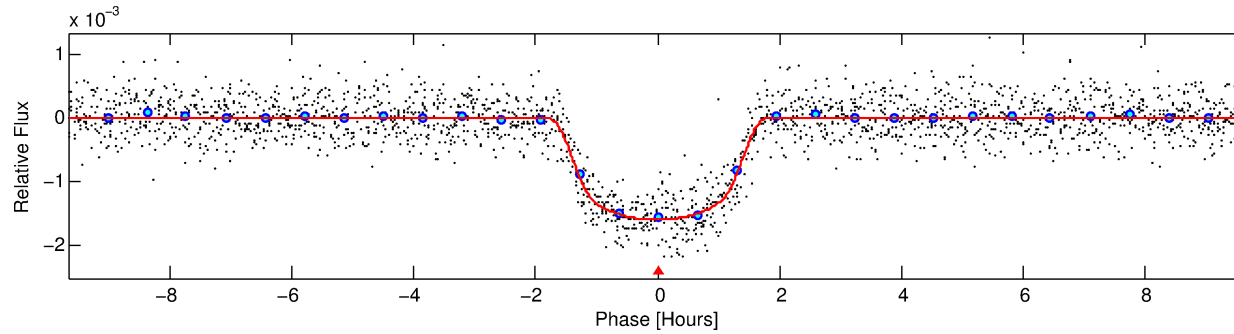
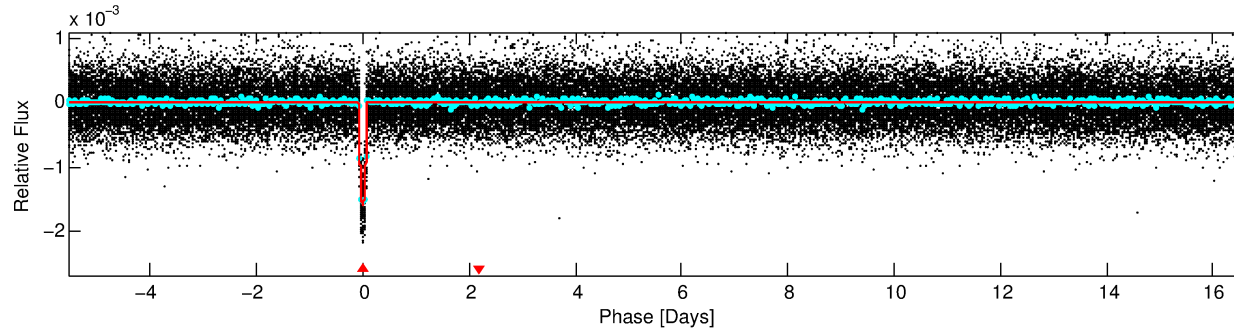
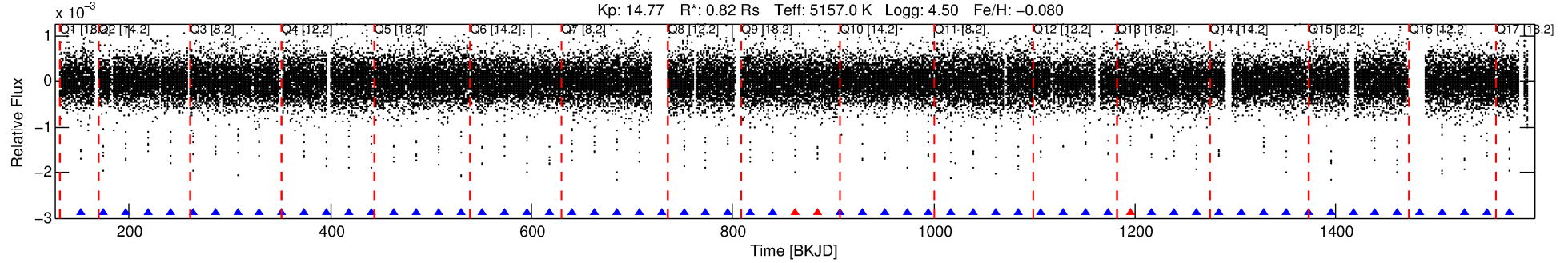
Ephemeris Match Information For 009589524-01

No Significant Match Found

DV One-Page Summary

KIC: 9589524 Candidate: 1 of 1 Period: 22.184 d
KOI: K00468.01 Corr: 0.973

Kp: 14.77 R*: 0.82 Rs Teff: 5157.0 K Logg: 4.50 Fe/H: -0.080



DV Fit Results:

Period = 22.18430 [0.00002] d
Epoch = 152.4137 [0.0009] BKJD
Rp/R* = 0.0412 [0.0024]
a/R* = 34.04 [7.34]
b = 0.81 [0.09]
Seff = 21.10 [4.25]
Teq = 547 [28] K
Rp = 3.68 [0.48] Re
a = 0.1418 [0.0150] AU
Ag = 34.40 [15.95] [2.09σ]
Teffp = 2046 [230] K [6.47σ]

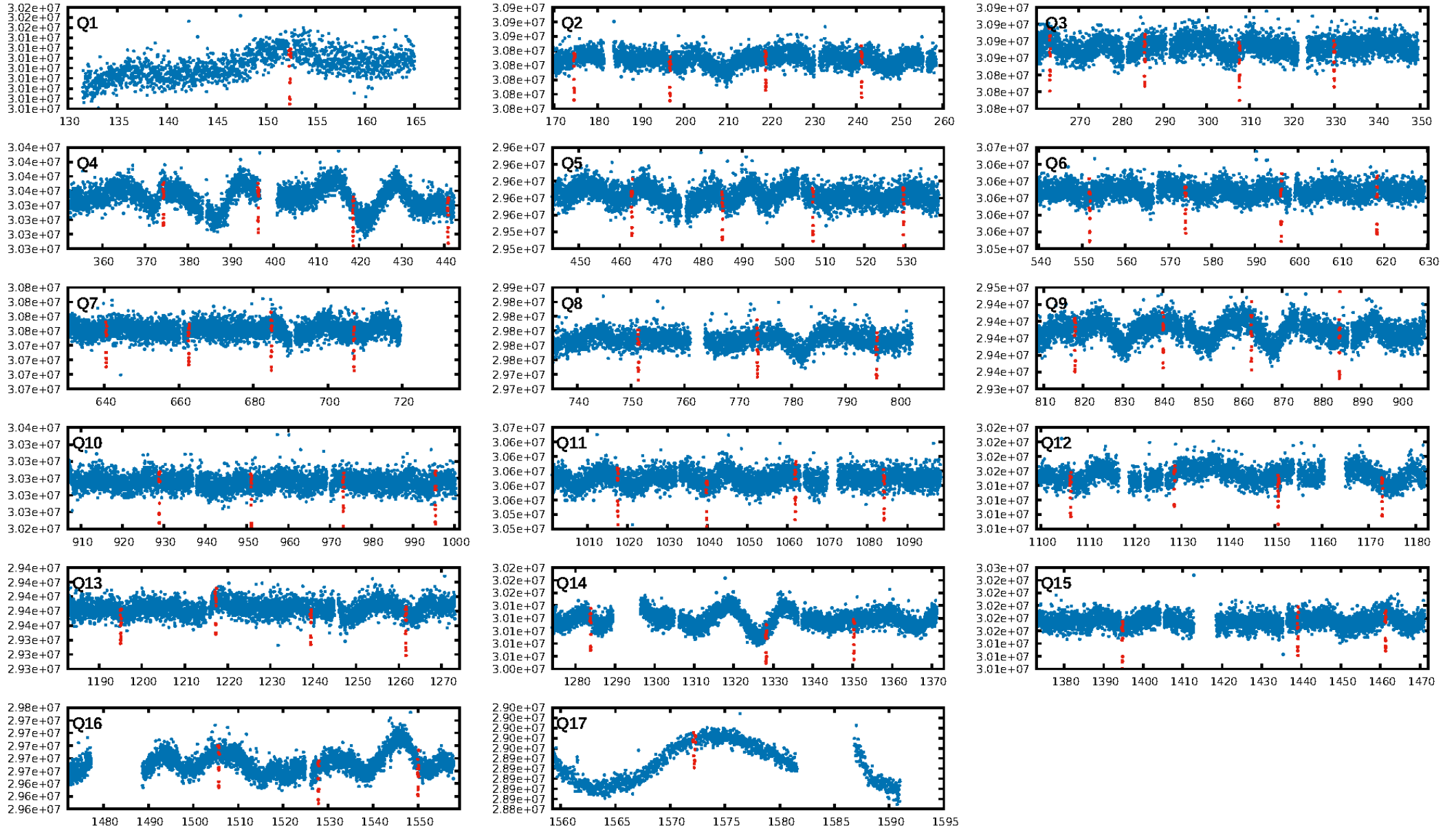
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 99.9%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 0.95 [53/56]
GhostDiagnostic-chr: 6.452
Centroid-sig: 44.1%
Centroid-so: 0.061 arcsec [0.35σ]
OotOffset-rm: 0.094 arcsec [0.98σ]
KicOffset-rm: 0.126 arcsec [1.54σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 1.00 [17/17]
DiffImageOverlap-fno: 1.00 [17/17]

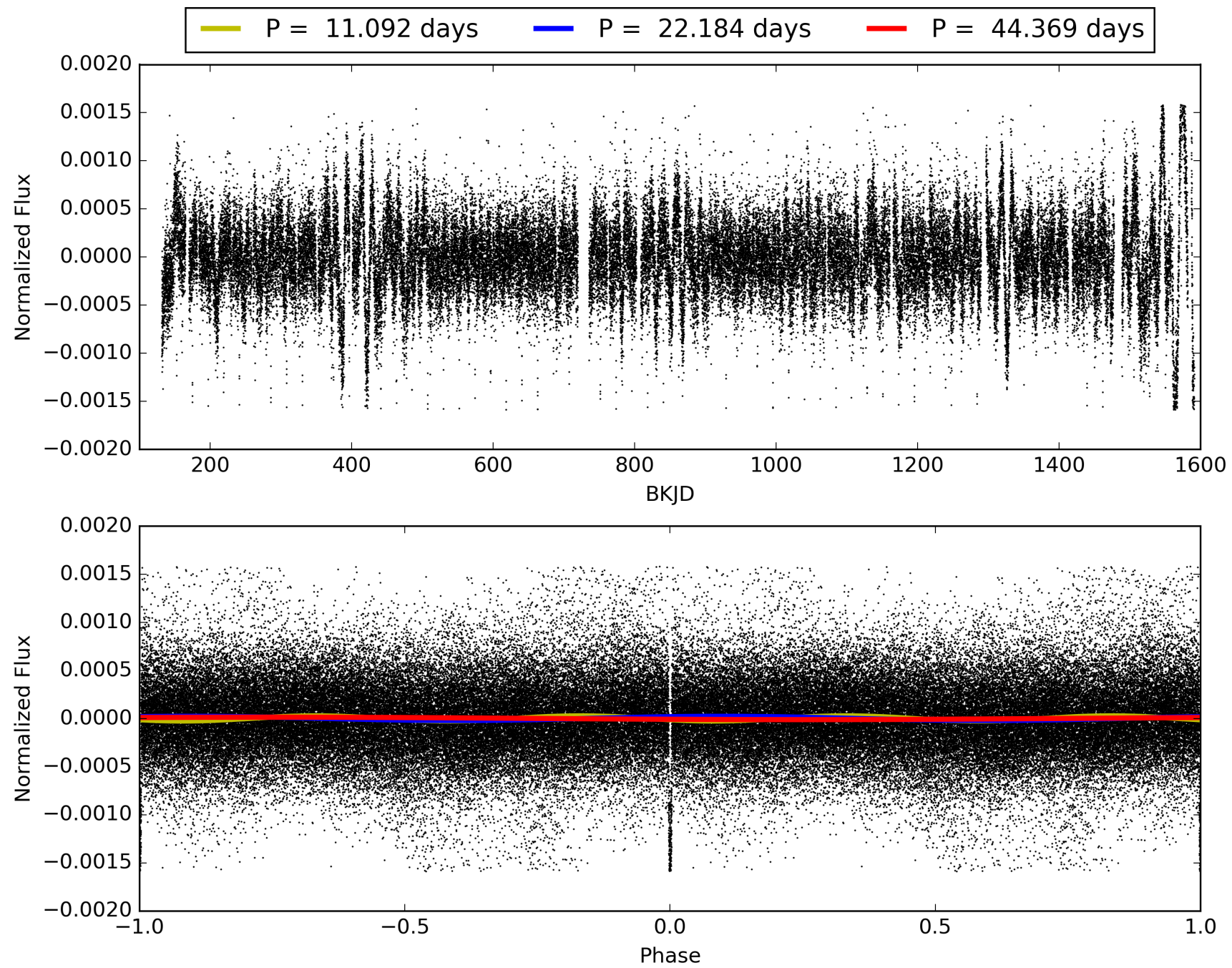
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 13:39:44 Z

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

TCE 009589524-01, PDC Light Curves

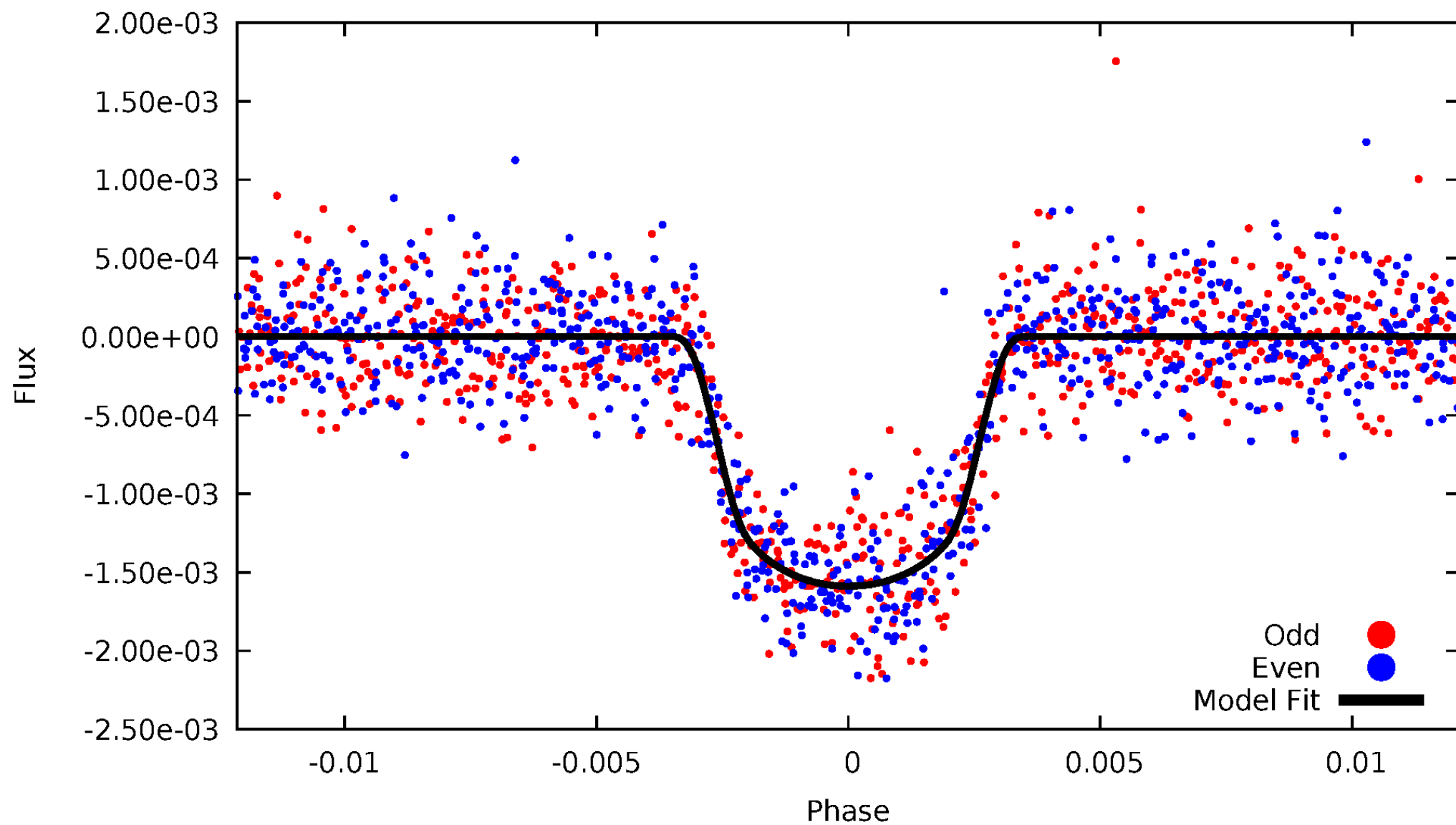


TCE 009589524-01



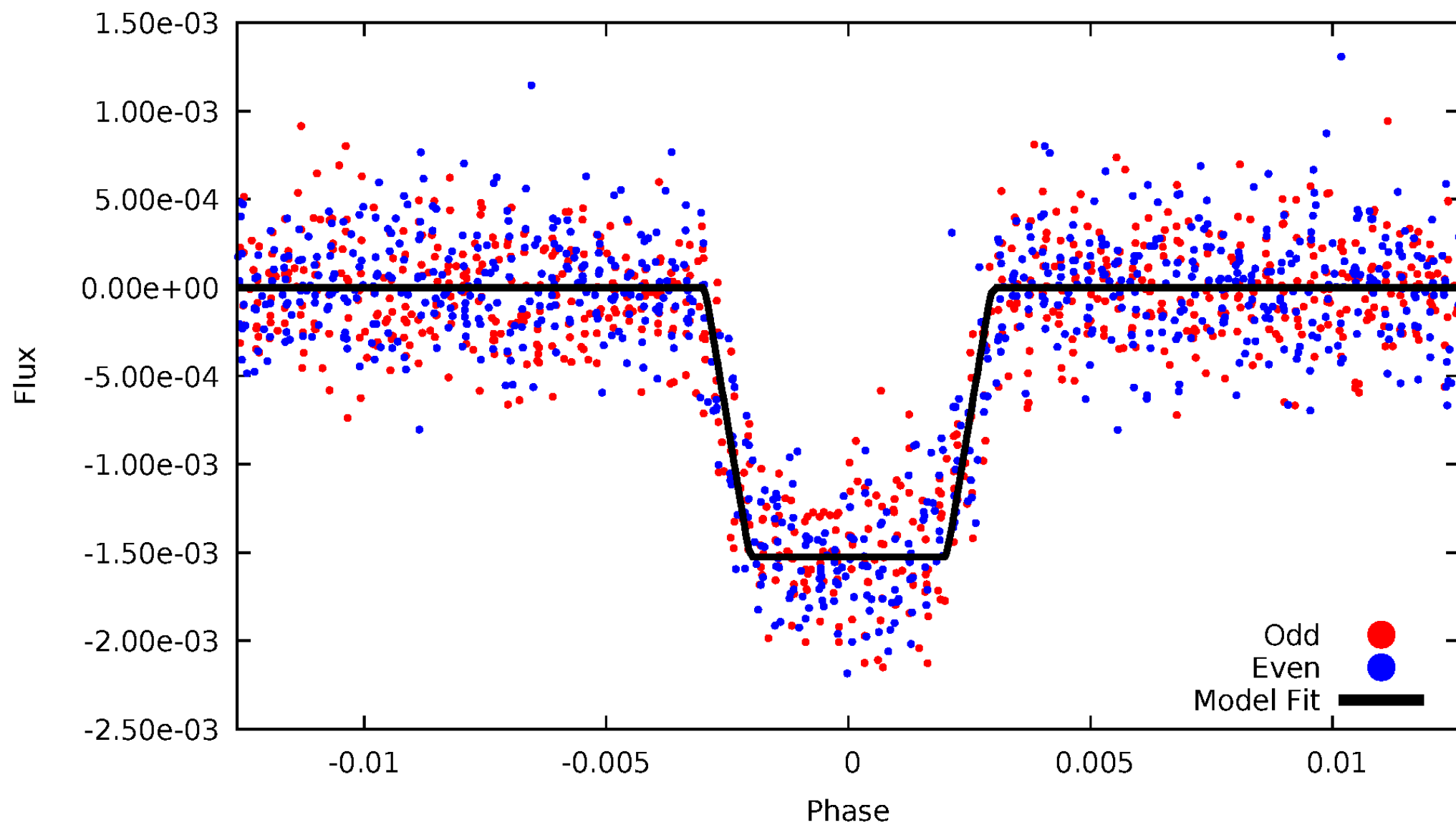
DV Odd/Even

TCE 009589524-01



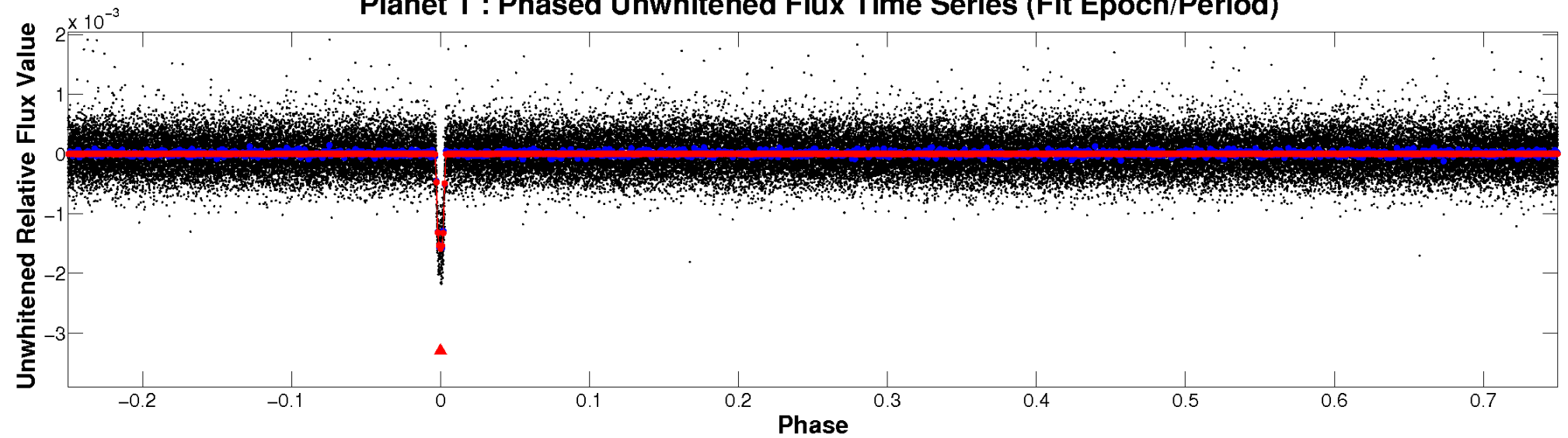
ALT Odd/Even

TCE 009589524-01

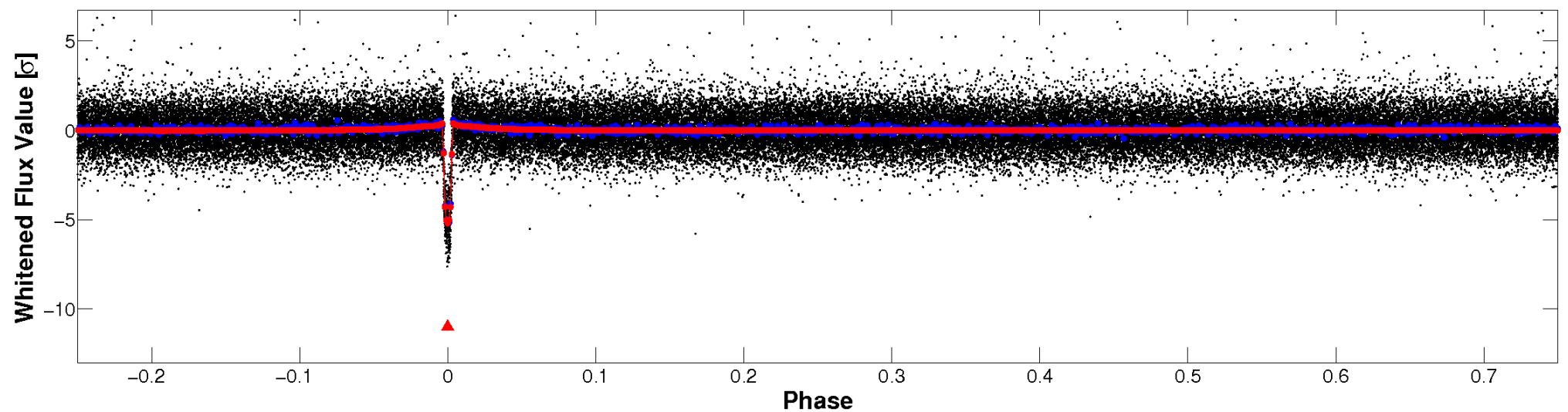


Non-Whitened Vs. Whitened Light Curve

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

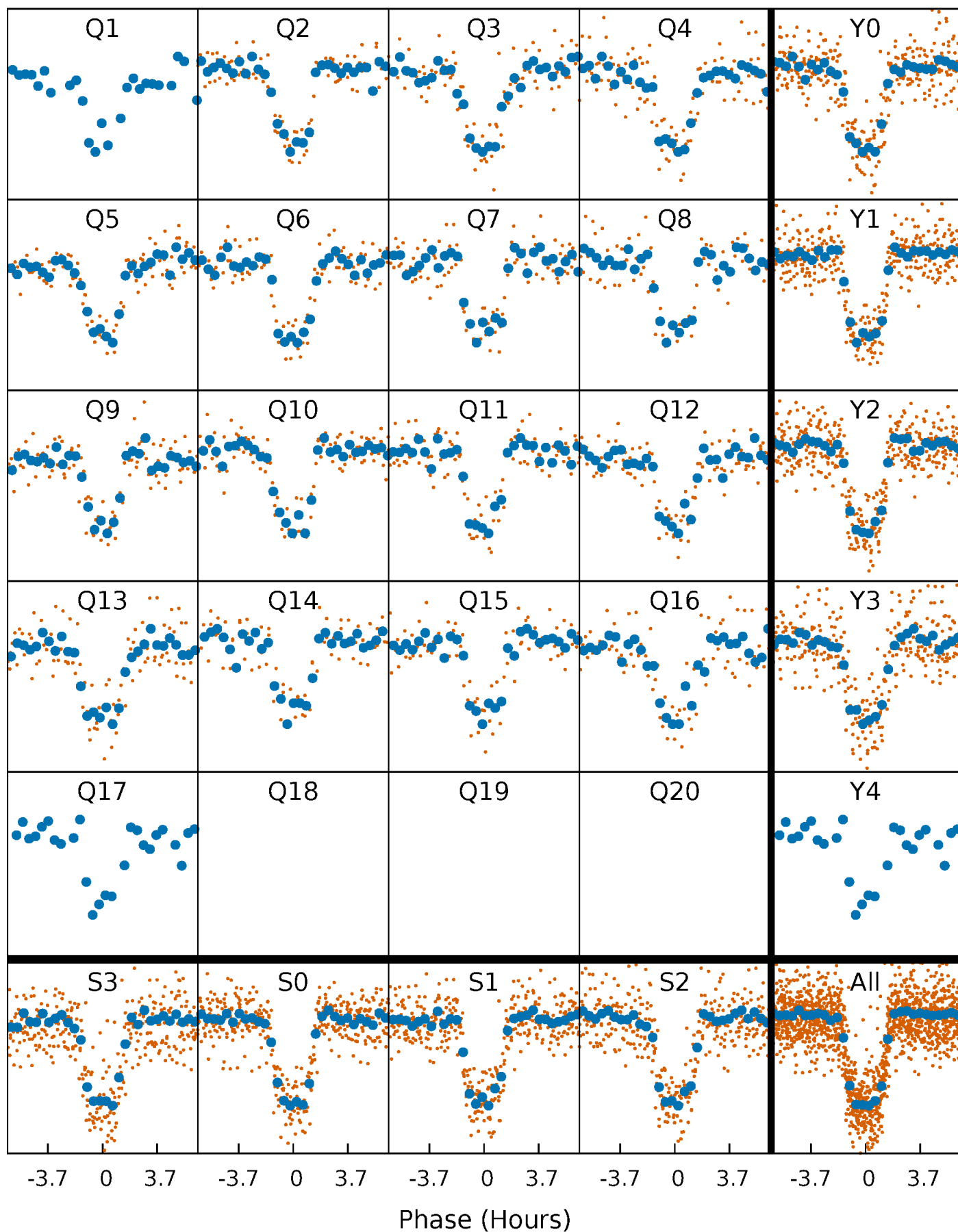


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



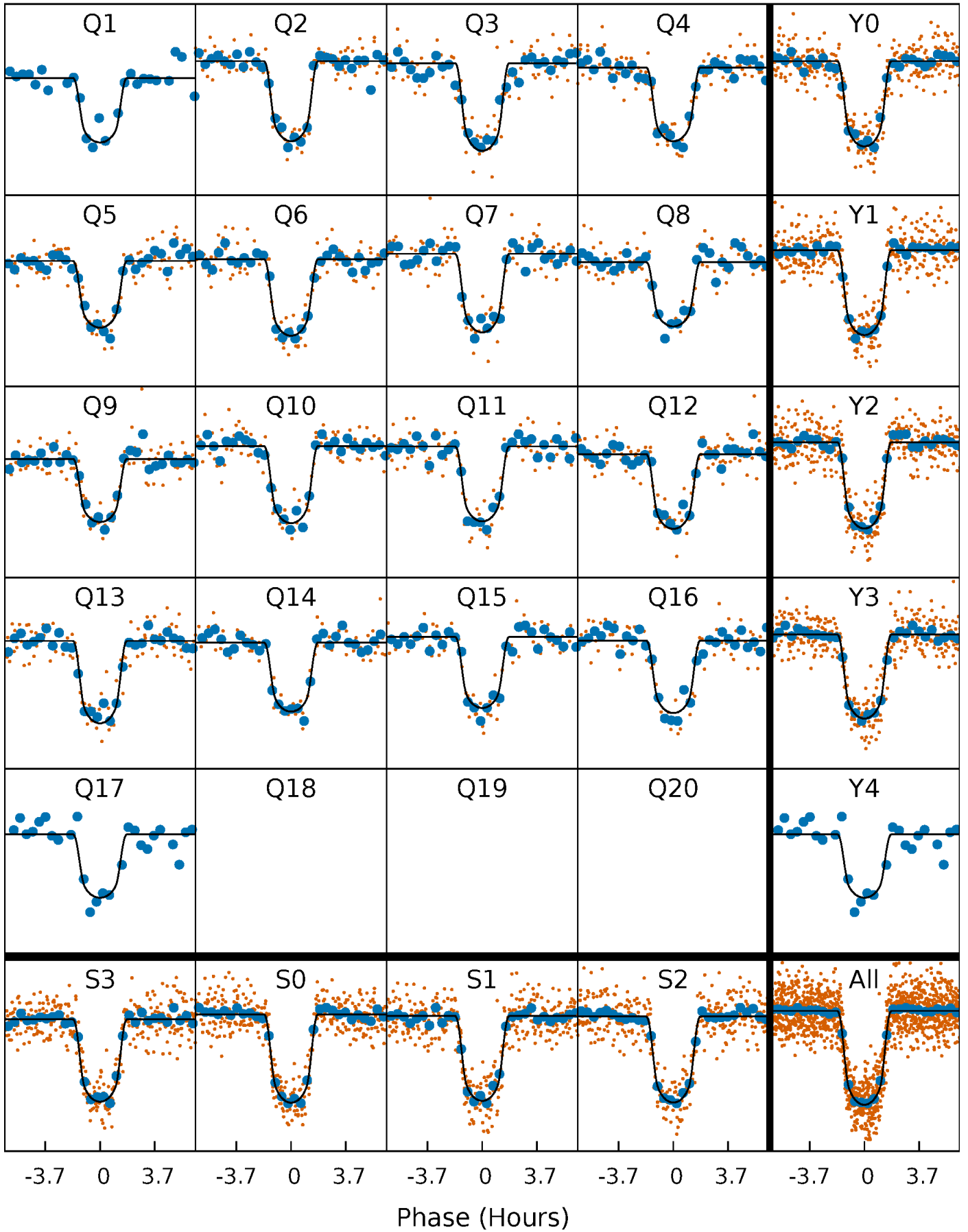
PDC Quarter-Phased Transit Curves

TCE 009589524-01 P= 22.184297 Days $T_0=152.413655$ (BKJD)



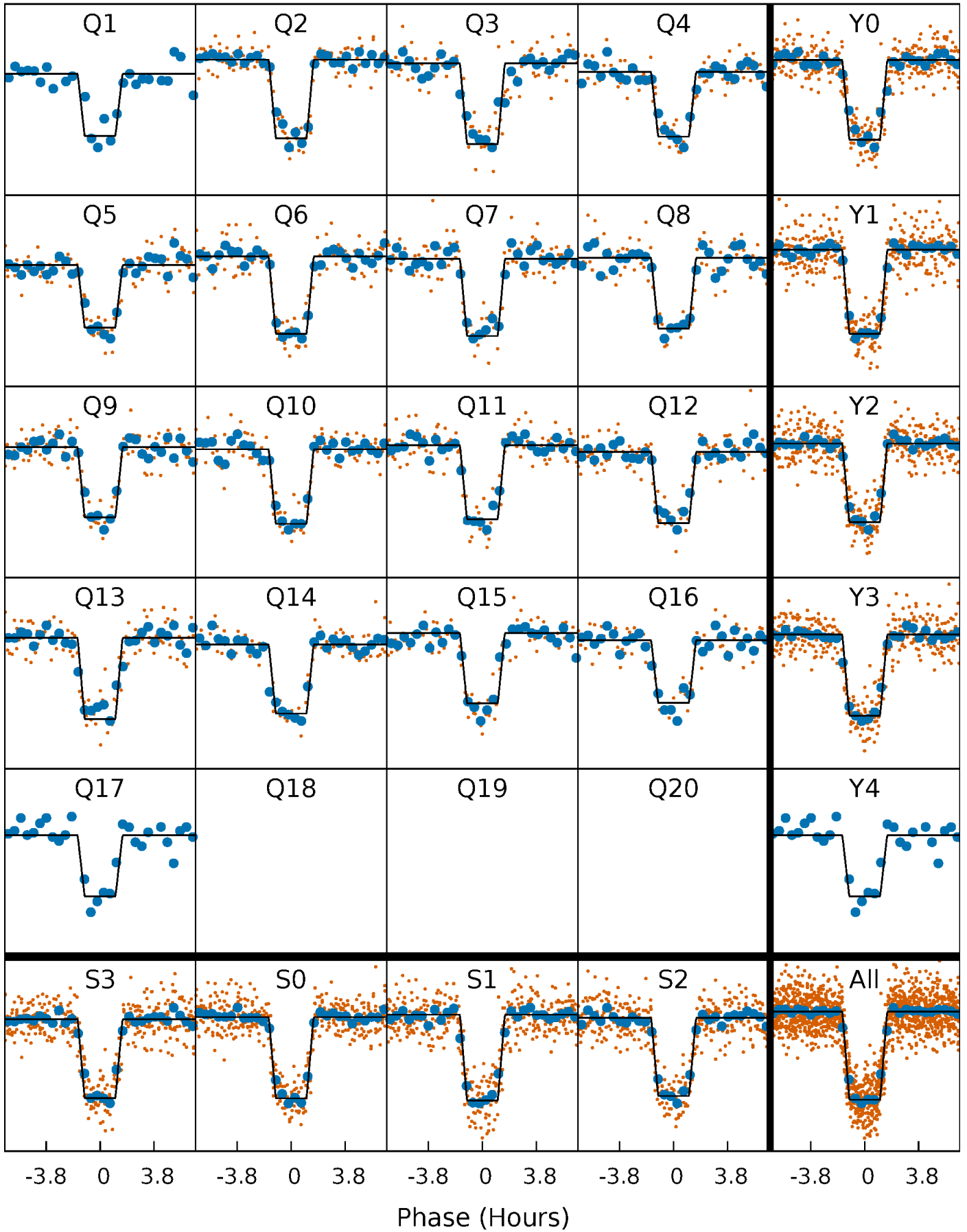
DV Quarter-Phased Transit Curves

TCE 009589524-01 P= 22.184297 Days $T_0=152.413655$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

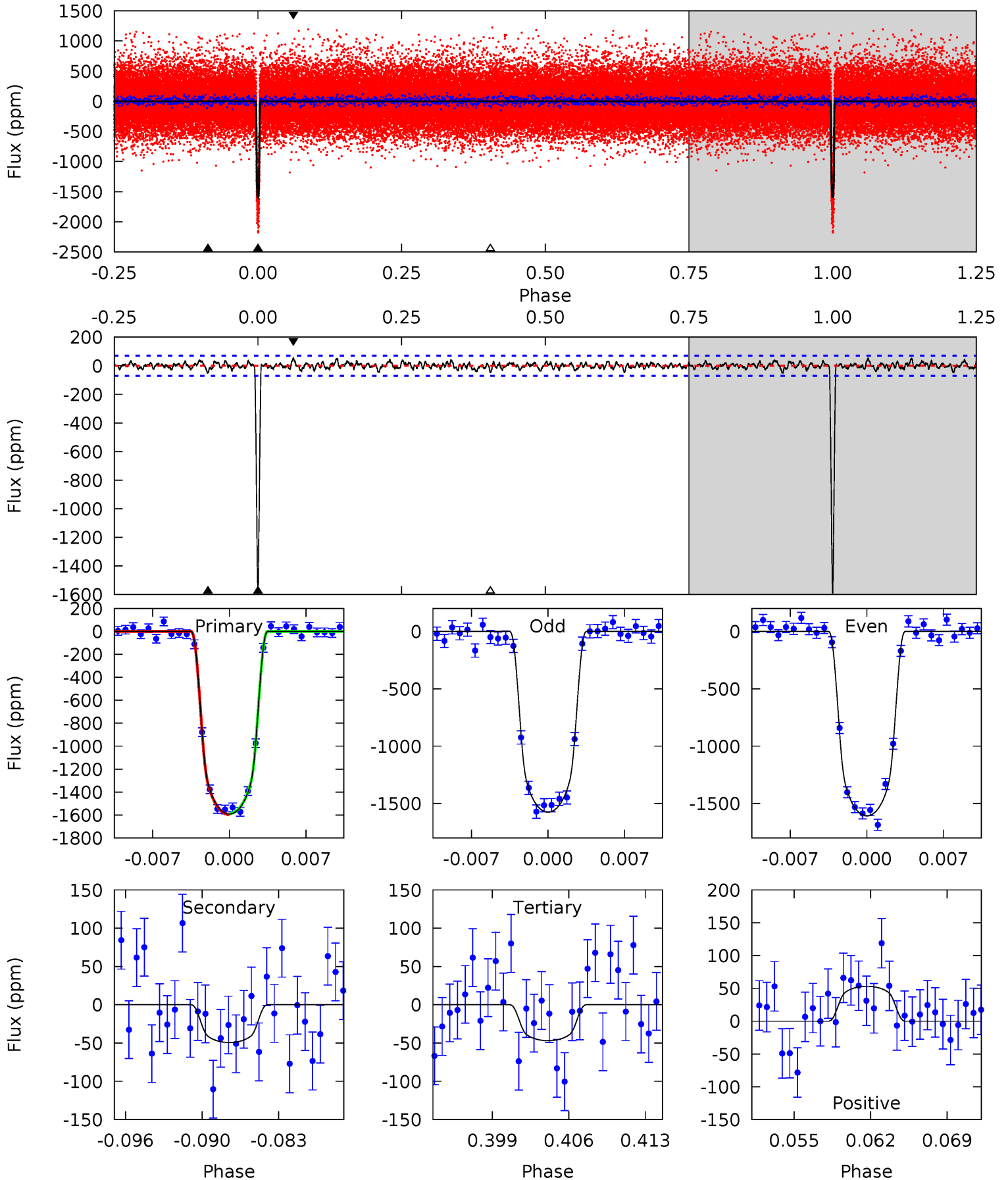
TCE 009589524-01 P= 22.184494 Days $T_0=152.407327$ (BKJD)



DV Model-Shift Uniqueness Test

009589524-01, P = 22.184297 Days, E = 130.229358 Days

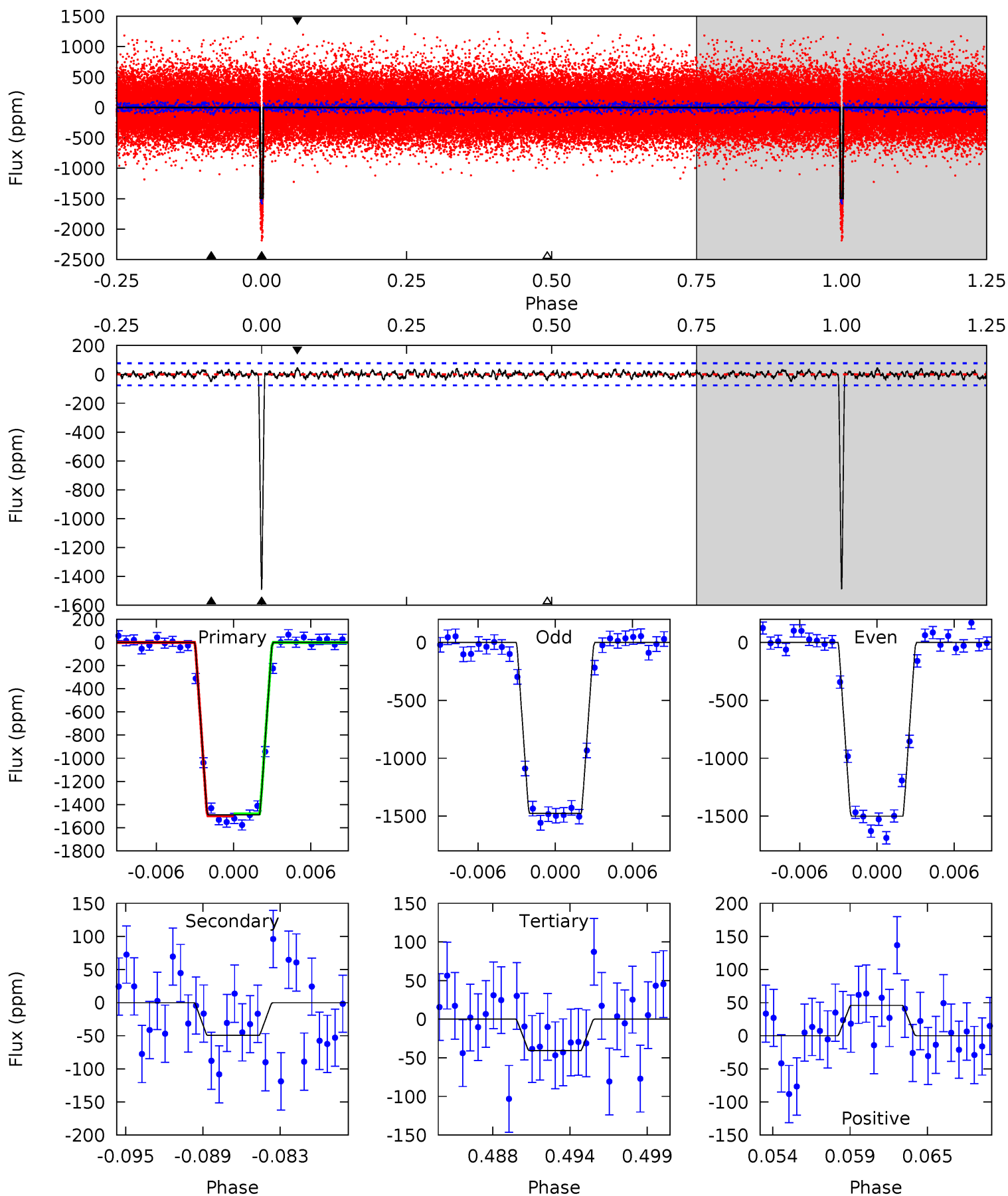
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
114.9	3.56	3.39	3.84	5.10	2.70	1.15	111.5	111.1	0.18	-0.27	1.16	1.00	0.03	0.35



Alt Model-Shift Uniqueness Test

009589524-01, P = 22.184494 Days, E = 130.222833 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
100.1	3.32	2.74	3.07	5.13	2.75	0.97	97.3	97.0	0.58	0.25	0.79	0.99	0.03	0.54



Stellar Parameters For KIC 009589524

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5157^{+153}_{-153}	$4.500^{+0.093}_{-0.076}$	$-0.080^{+0.300}_{-0.300}$	$0.818^{+0.086}_{-0.096}$	$0.771^{+0.098}_{-0.057}$	$1.986^{+0.763}_{-0.462}$
	+3%/-3%	+2%/-2%	+375%/-375%	+11%/-12%	+13%/-7%	+38%/-23%
Source	PHO1	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 009589524-01 / KOI 0468.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-49 ± 14	$3.69^{+0.35}_{-0.31}$	763^{+33}_{-33}	2828^{+122}_{-136}	41^{+14}_{-13}
Alt.	-49 ± 15	$3.48^{+0.34}_{-0.33}$	762^{+32}_{-34}	2875^{+137}_{-142}	45^{+17}_{-14}

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 $A_{obs} \gg 1.0$

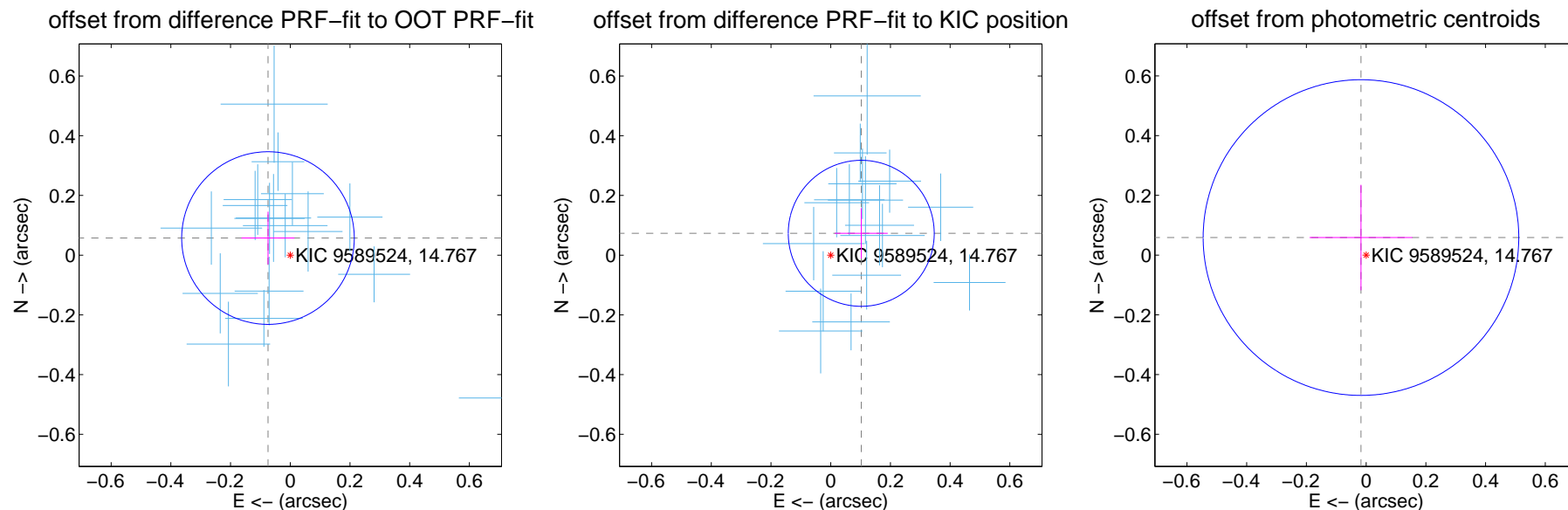
DV Centroid Data

Supplemental centroid analysis for 009589524-01. Kepler magnitude: 14.77. Transit SNR 81.21

There are 17 quarters with good PRF difference image offsets

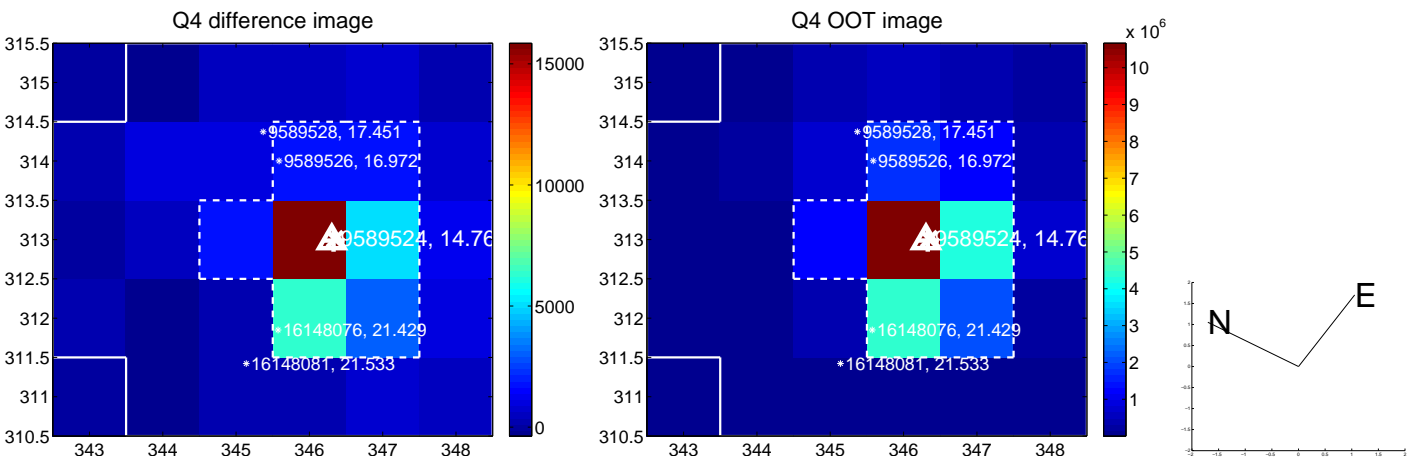
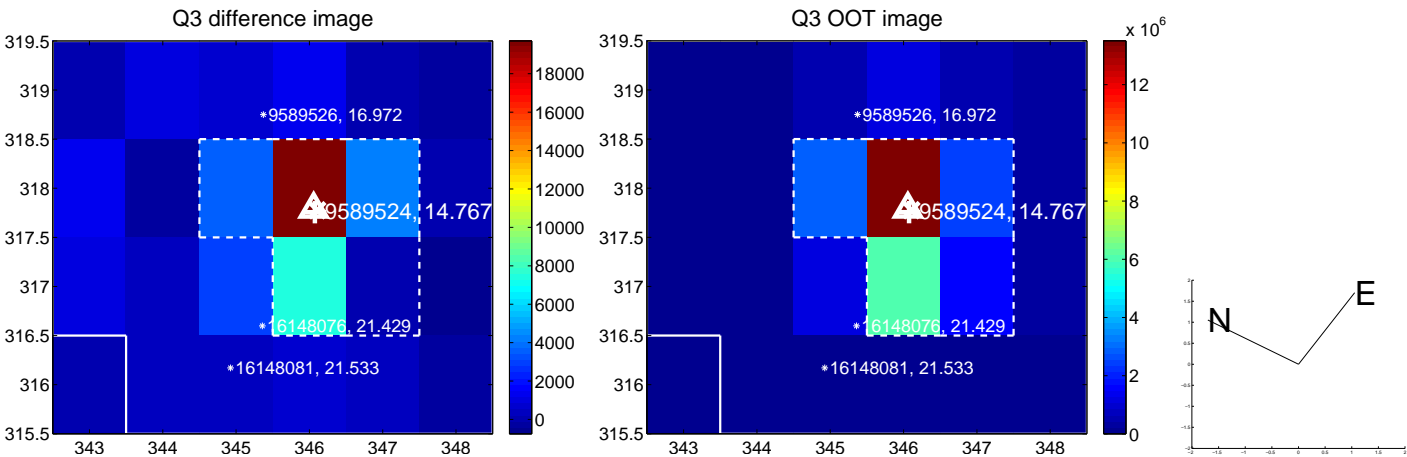
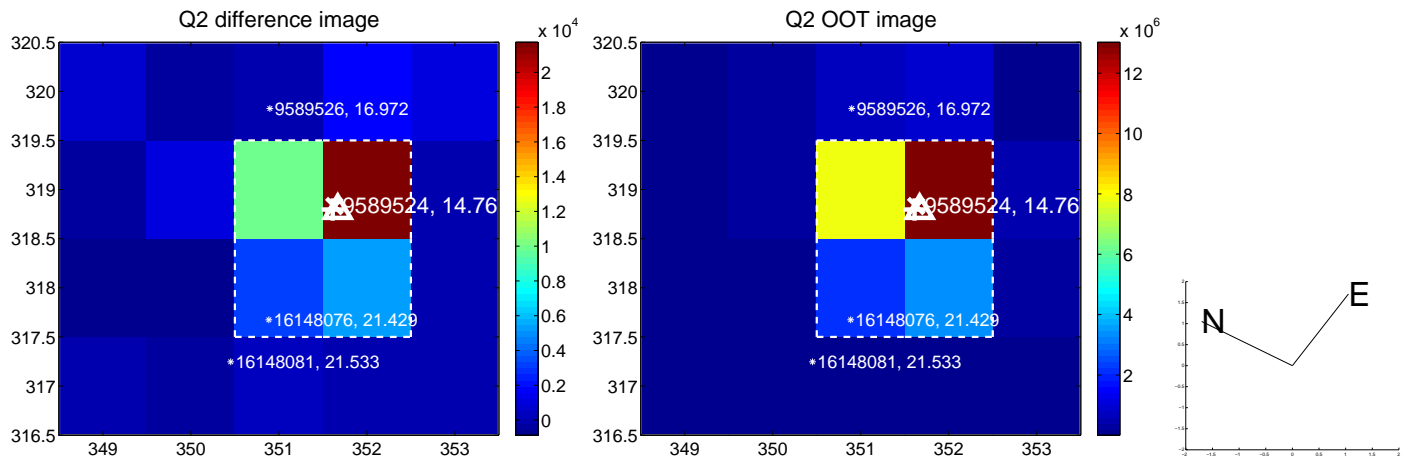
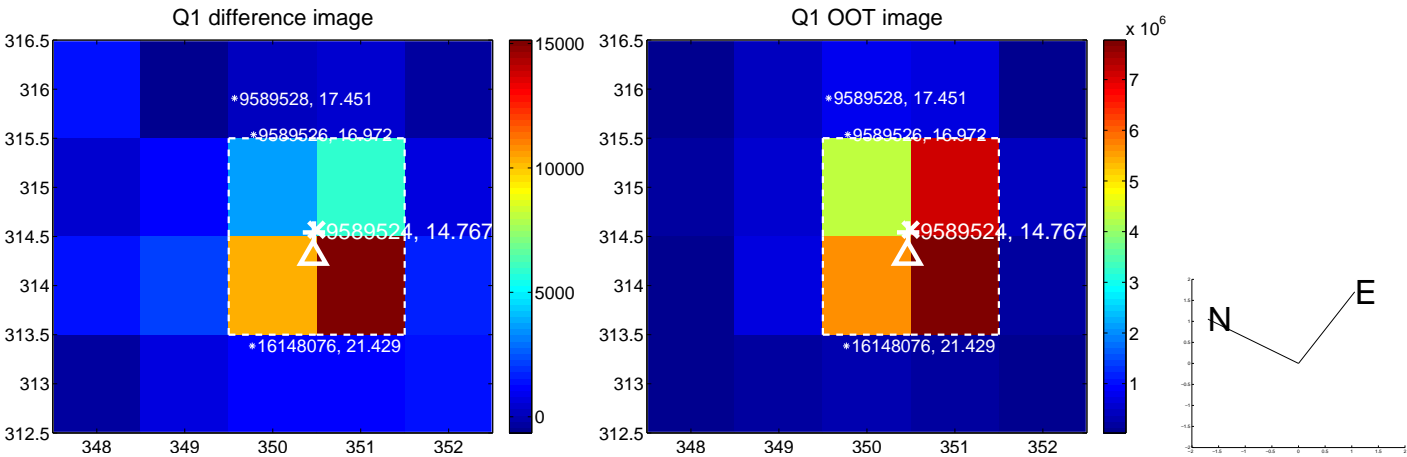
The direct PRF centroid is offset from the target star catalog position by about 0.18 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.094 ± 0.096	0.98	0.075 ± 0.089	0.057 ± 0.088
PRF-fit source offset from KIC position	0.126 ± 0.081	1.54	-0.102 ± 0.089	0.073 ± 0.084
photometric centroid source offset	0.06 ± 0.18	0.35	0.02 ± 0.17	0.06 ± 0.18

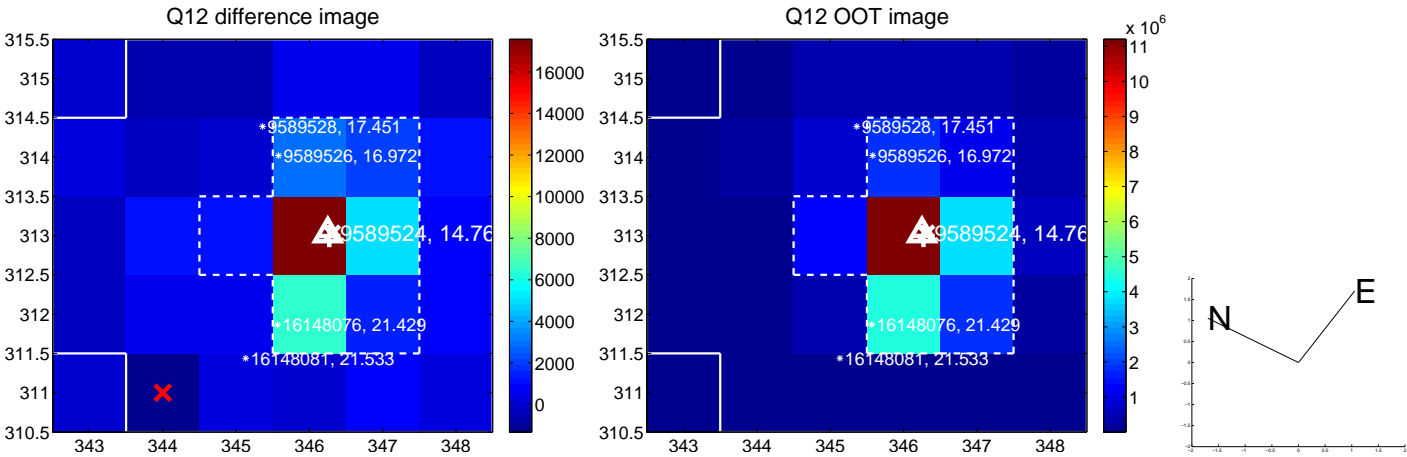
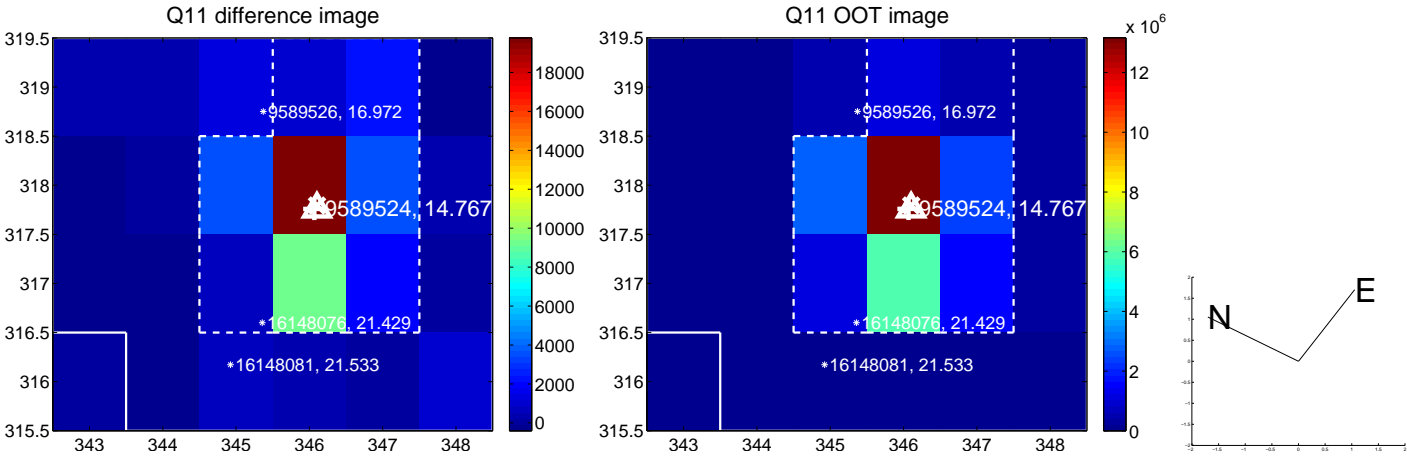
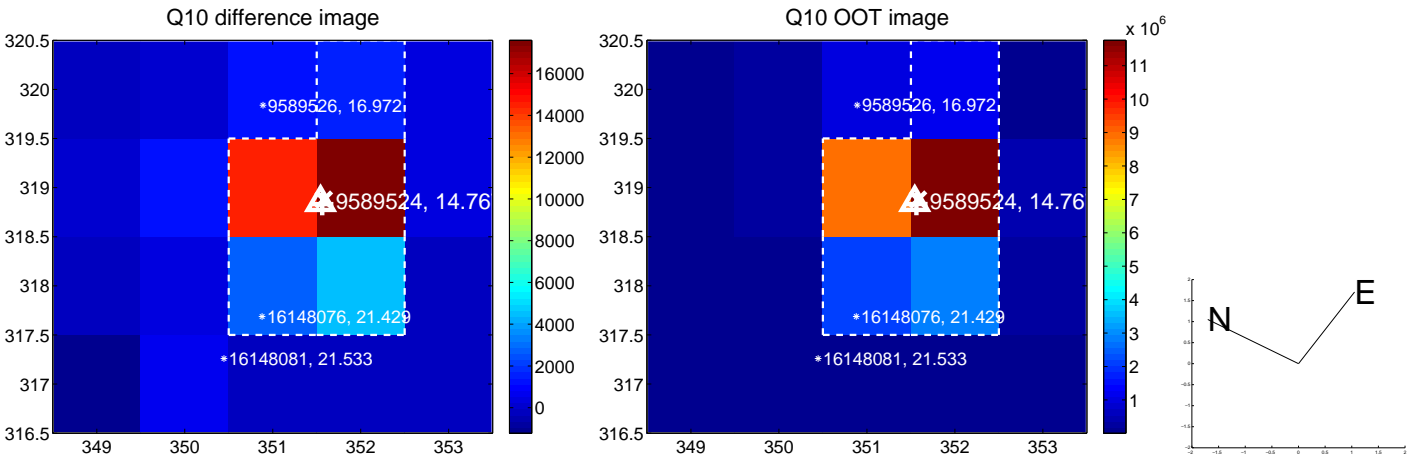
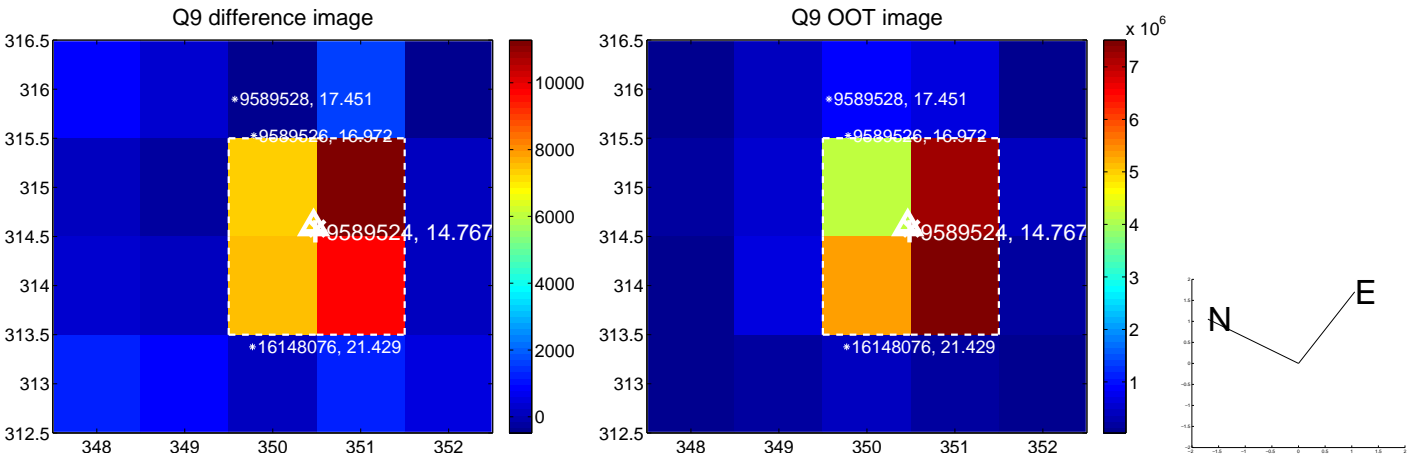


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

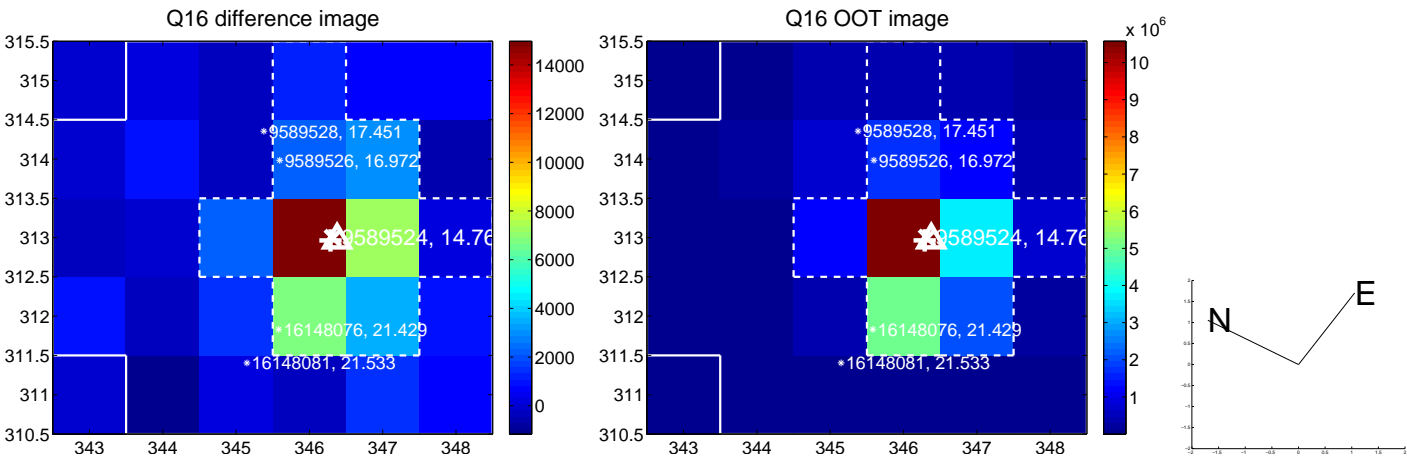
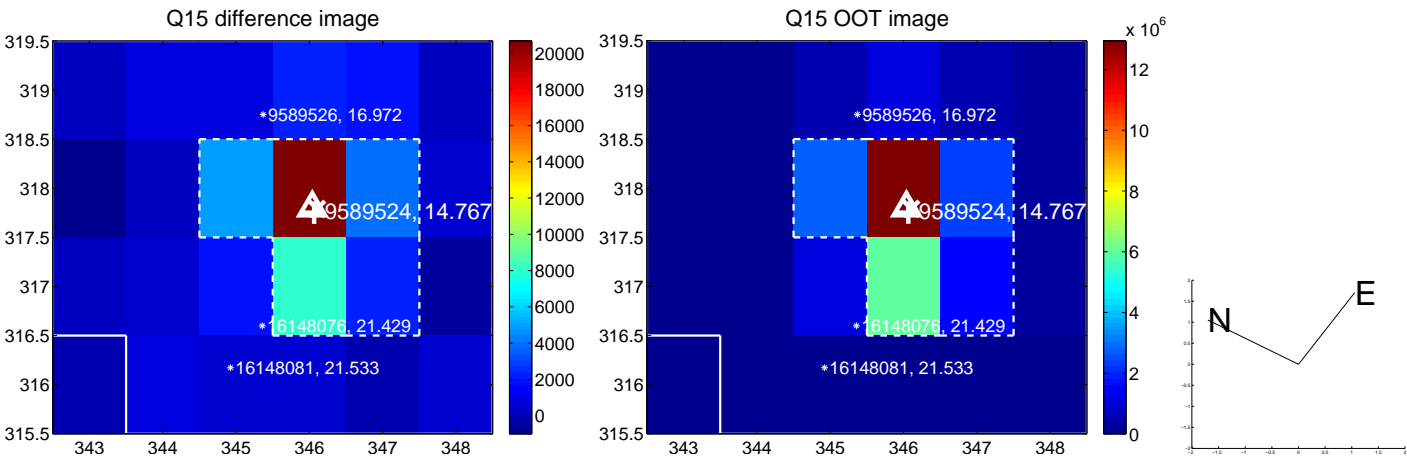
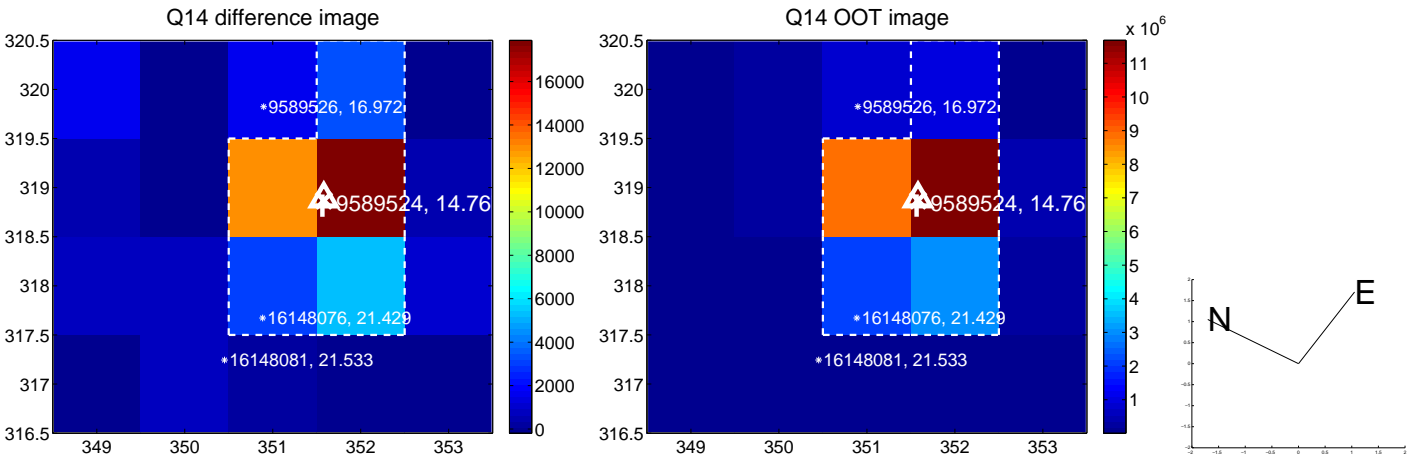
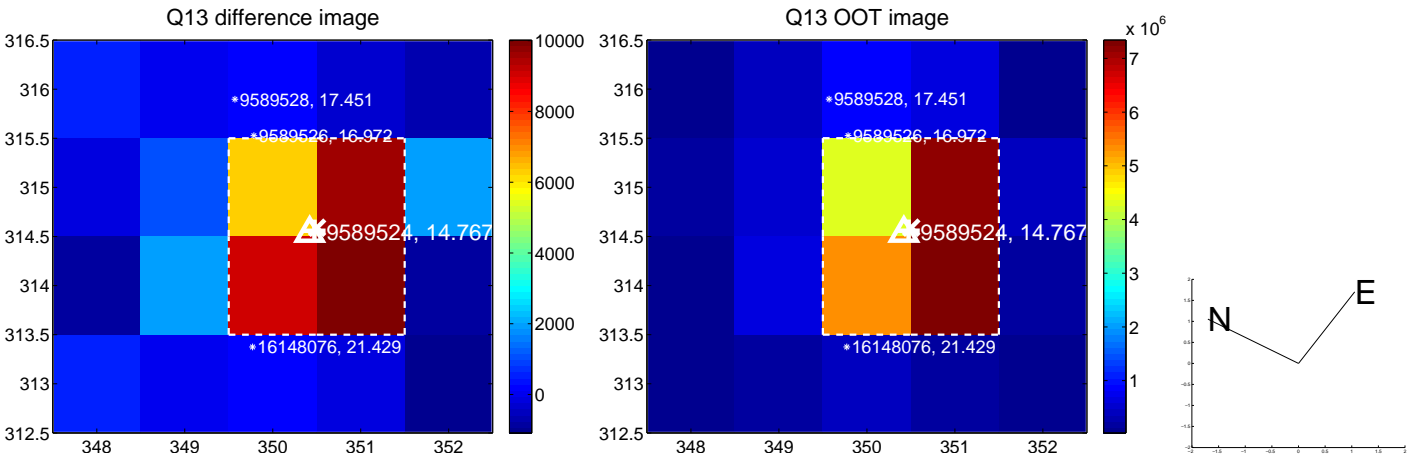
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



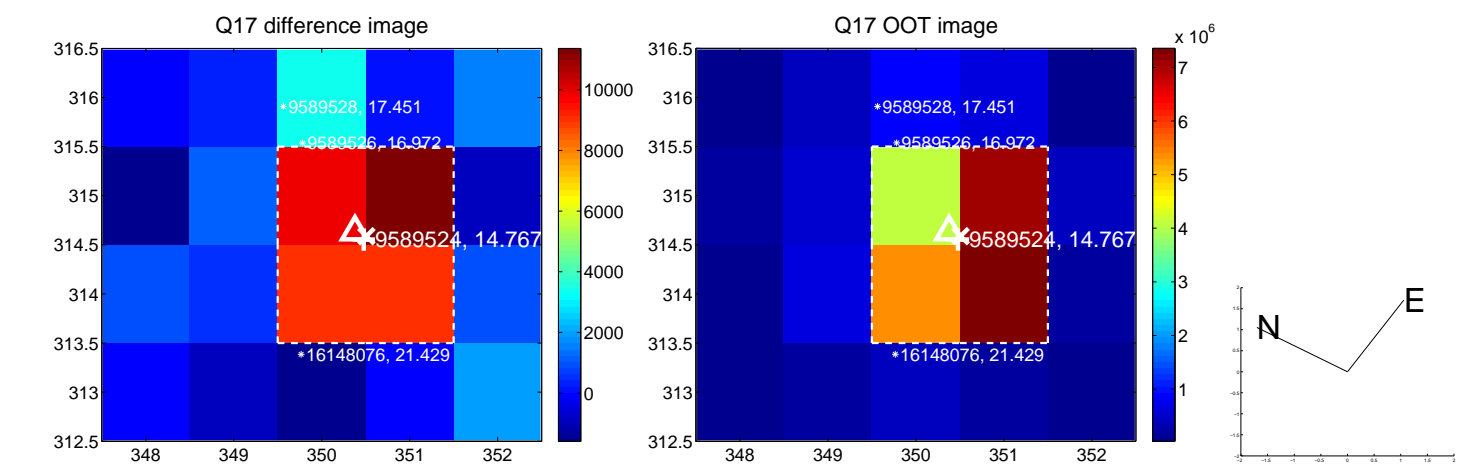
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



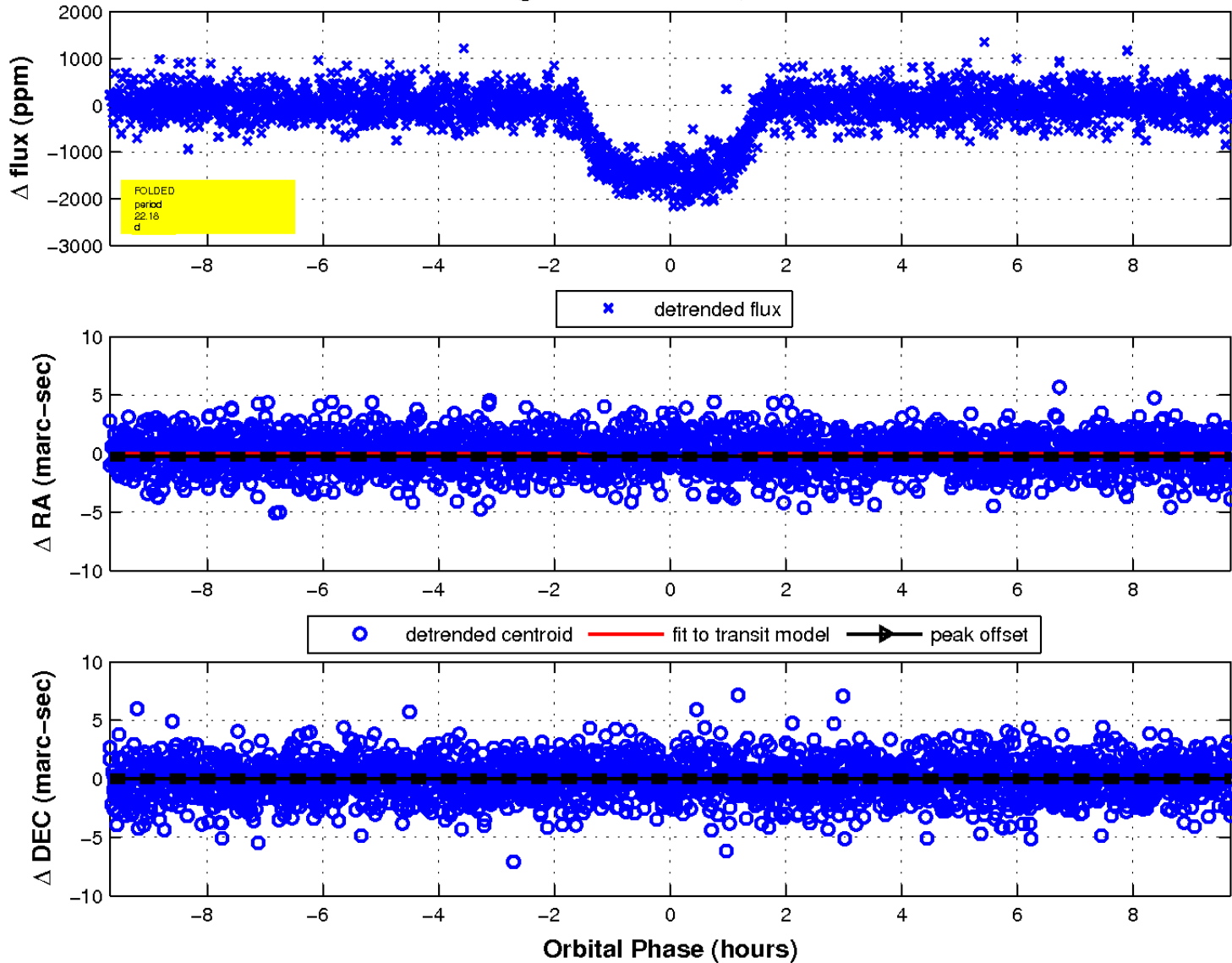
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

