

KIC 004574310

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})
004574310-01	OBS	6427.01	1.306223	132.110836	467832.0	4.663	11229.3	3803.0	1.12	6600	121.20	4566.23

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004574310-01	OBS	FP	0.00	0	1	0	0	SWEET_EB—MOD_SEC_DV—MOD_SEC_ALT—MOD_ODDEVEN_DV—DEEP_V_SHAPED—SEASONAL_DEPTH_DV

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.

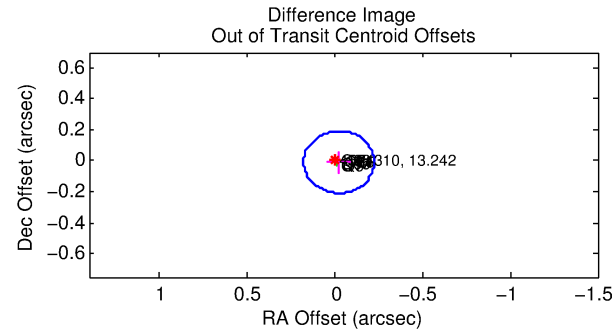
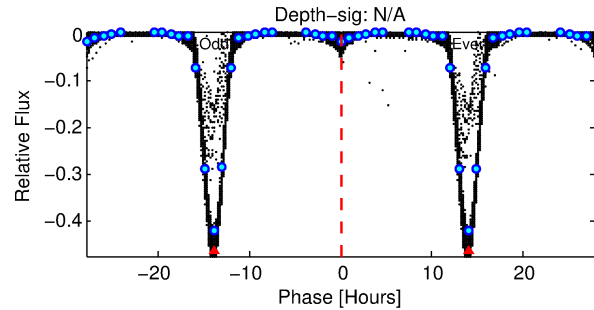
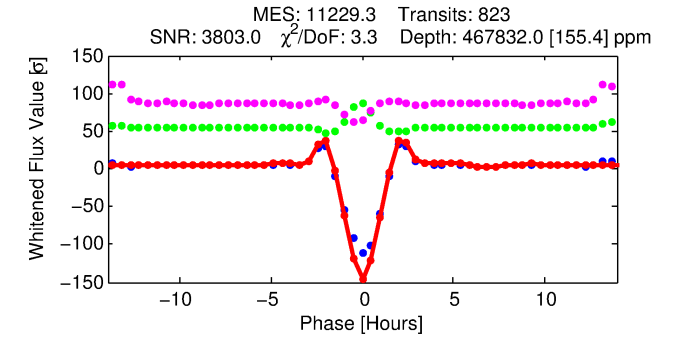
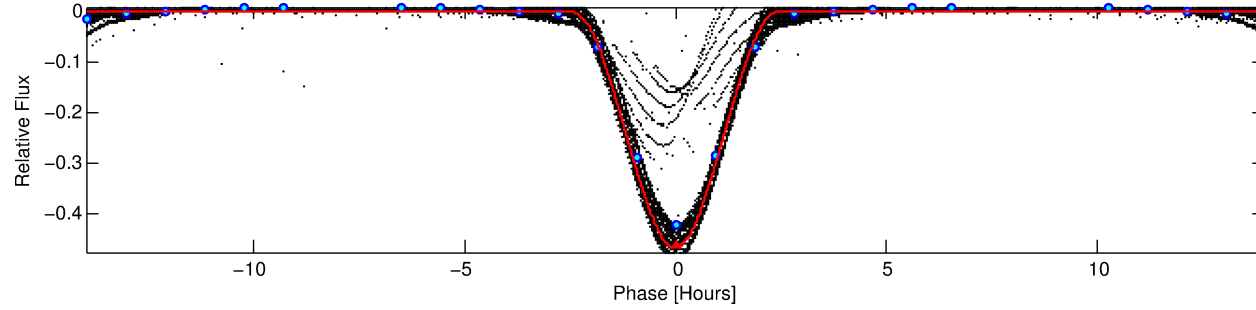
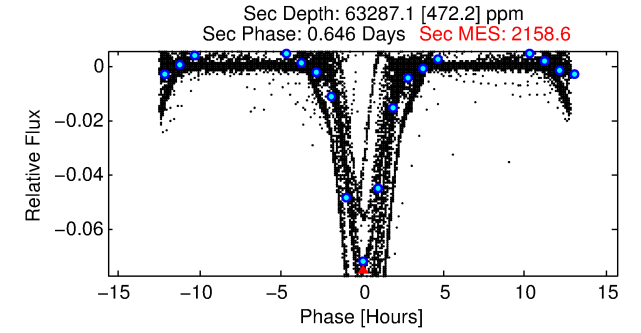
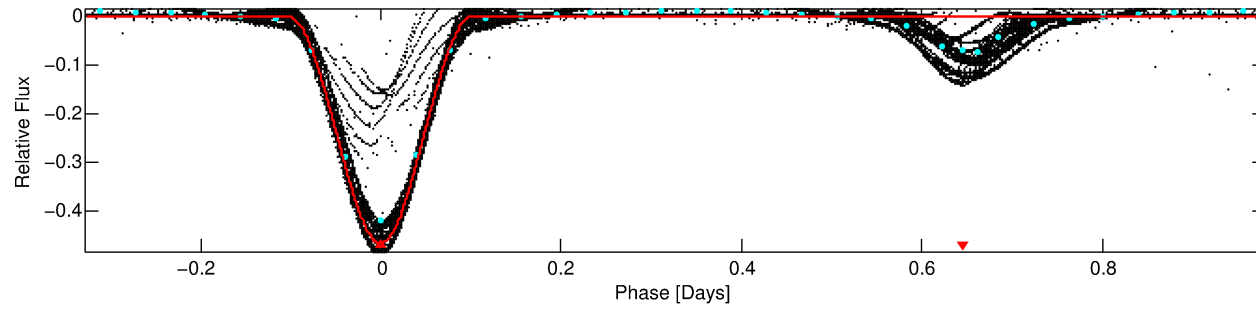
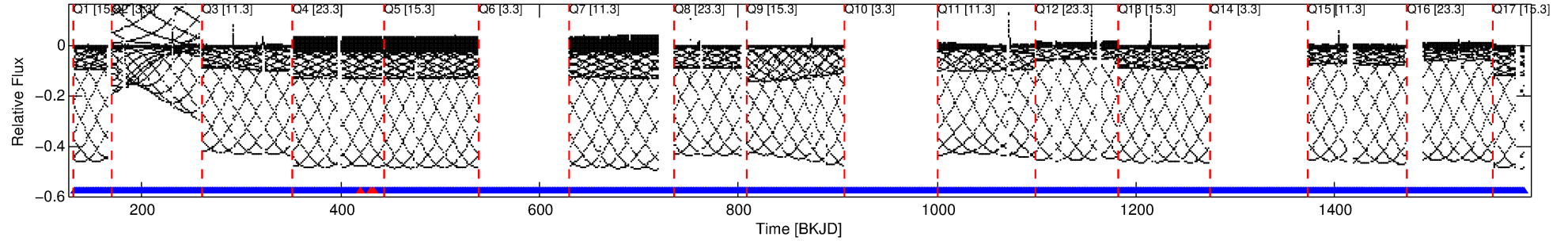
Ephemeris Match Information For 004574310-01

No Significant Match Found

DV One-Page Summary

KIC: 4574310 Candidate: 1 of 1 Period: 1.306 d
KOI: K06427.01 Corr: 0.952

Kp: 13.24 R*: 1.12 Rs Teff: 6600.0 K Logg: 4.24 Fe/H: -1.520



DV Fit Results:

Period = 1.30622 [0.00000] d
Epoch = 132.1108 [0.0000] BKJD
Rp/R* = 0.9882 [0.0019]
a/R* = 4.07 [0.00]
b = 0.86 [0.00]
Seff = 4566.23 [2148.18]
Teff = 2096 [247] K
Rp = 121.20 [32.57] Re
a = 0.0217 [0.0059] AU
Ag = 1.11 [0.50] [0.23σ]
Teffp = 3330 [110] K [4.57σ]

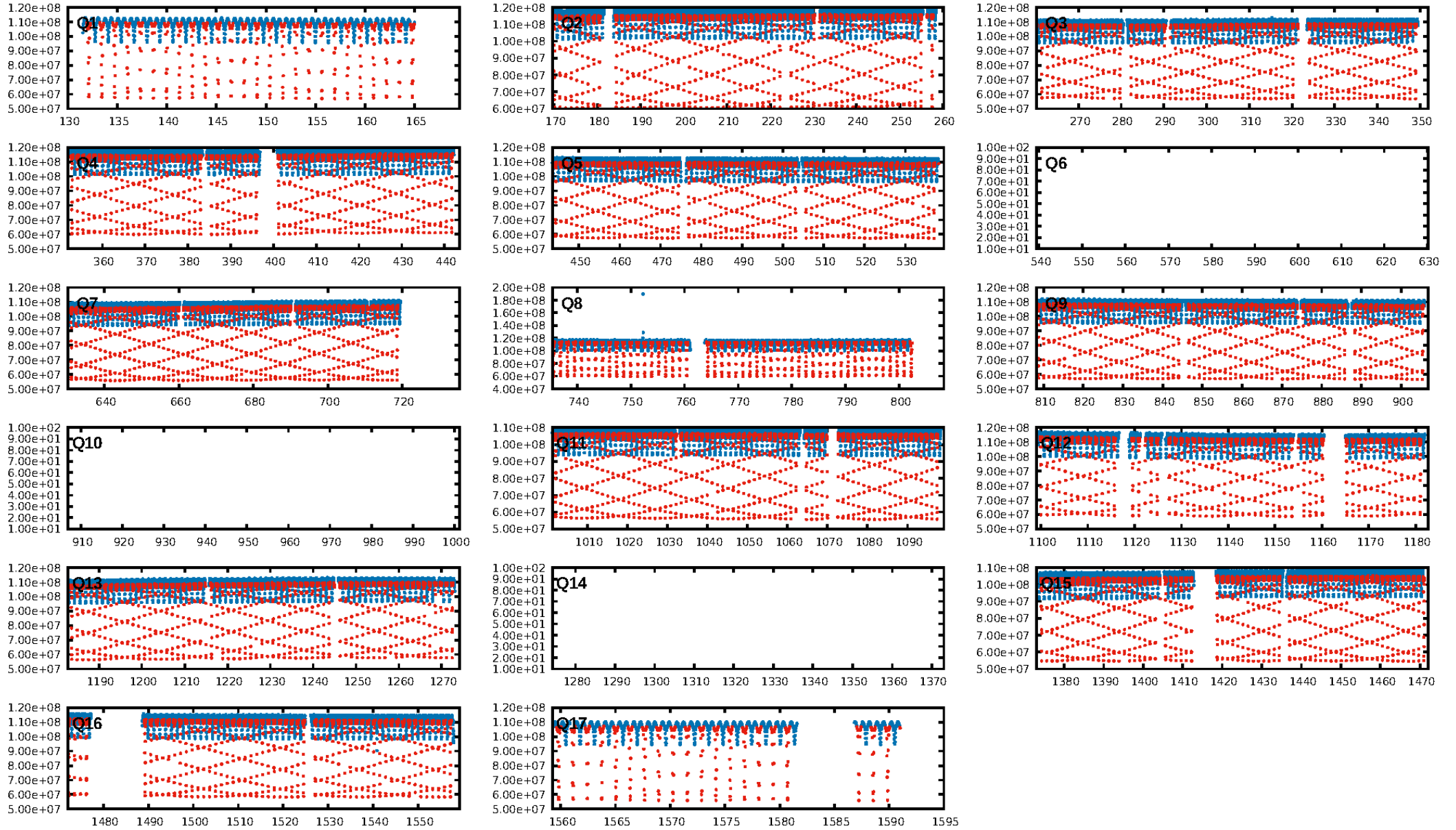
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [774/777]
GhostDiagnostic-chr: N/A
Centroid-sig: N/A
Centroid-so: N/A
OotOffset-rm: 0.025 arcsec [0.38σ]
KicOffset-rm: 0.091 arcsec [1.34σ]
OotOffset-st: 1/4/4/5 [14]
KicOffset-st: 1/4/4/5 [14]
DiffImageQuality-fgm: 1.00 [14/14]
DiffImageOverlap-fno: 1.00 [14/14]

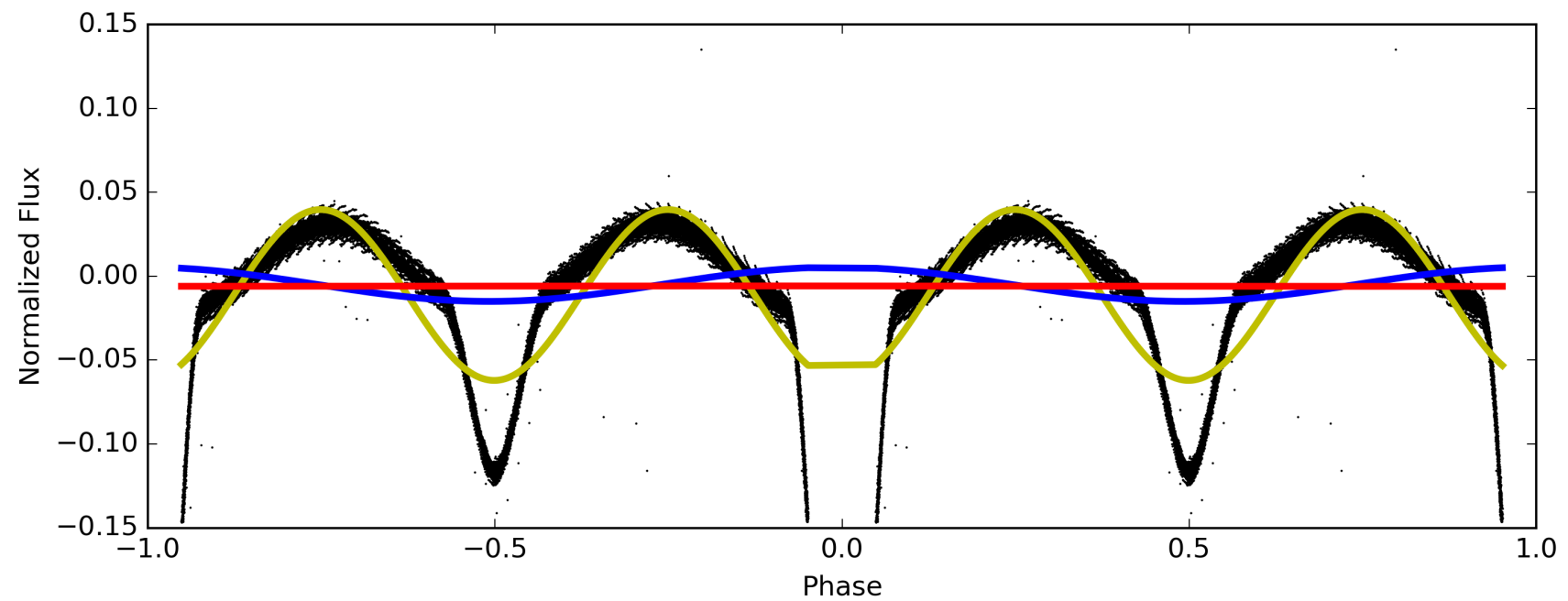
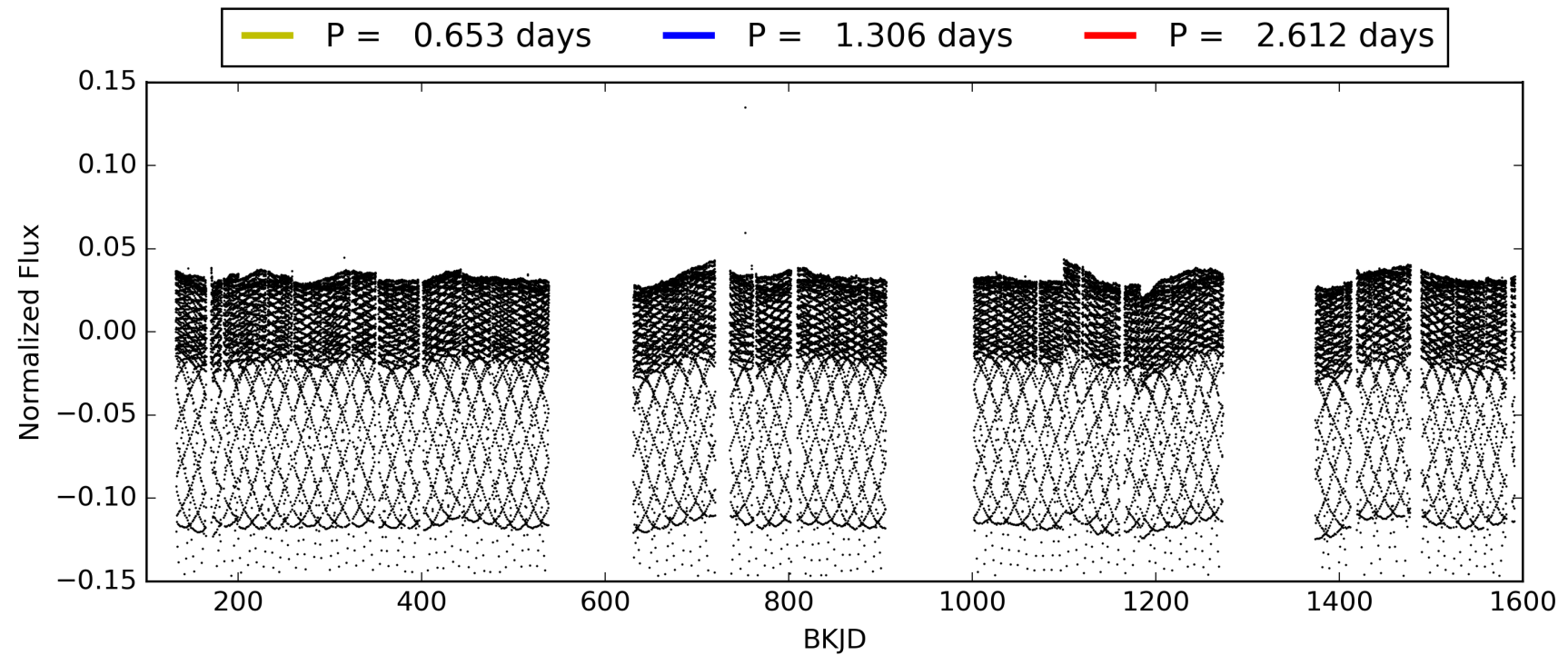
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 08:51:43 Z

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

TCE 004574310-01, PDC Light Curves

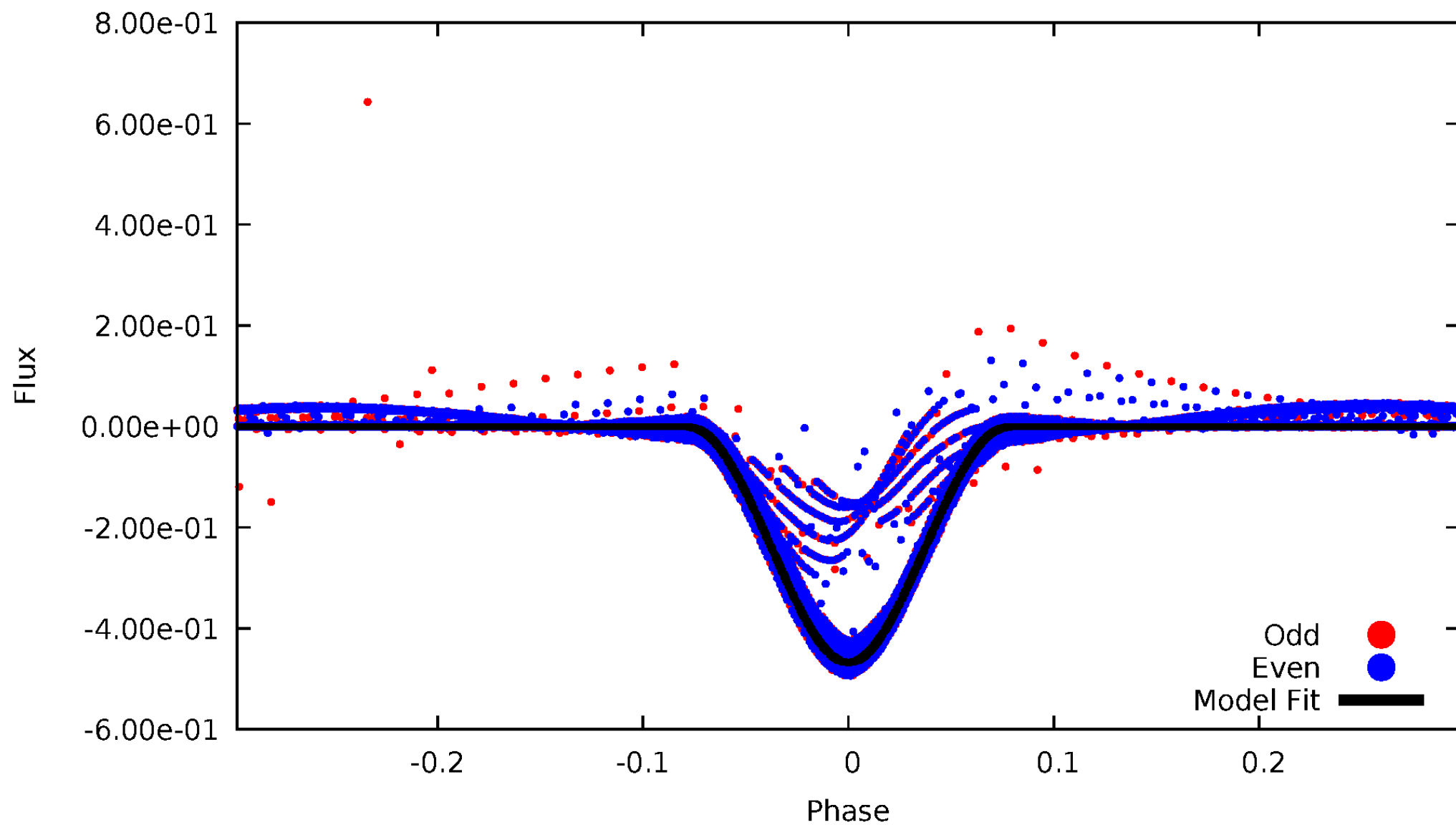


TCE 004574310-01



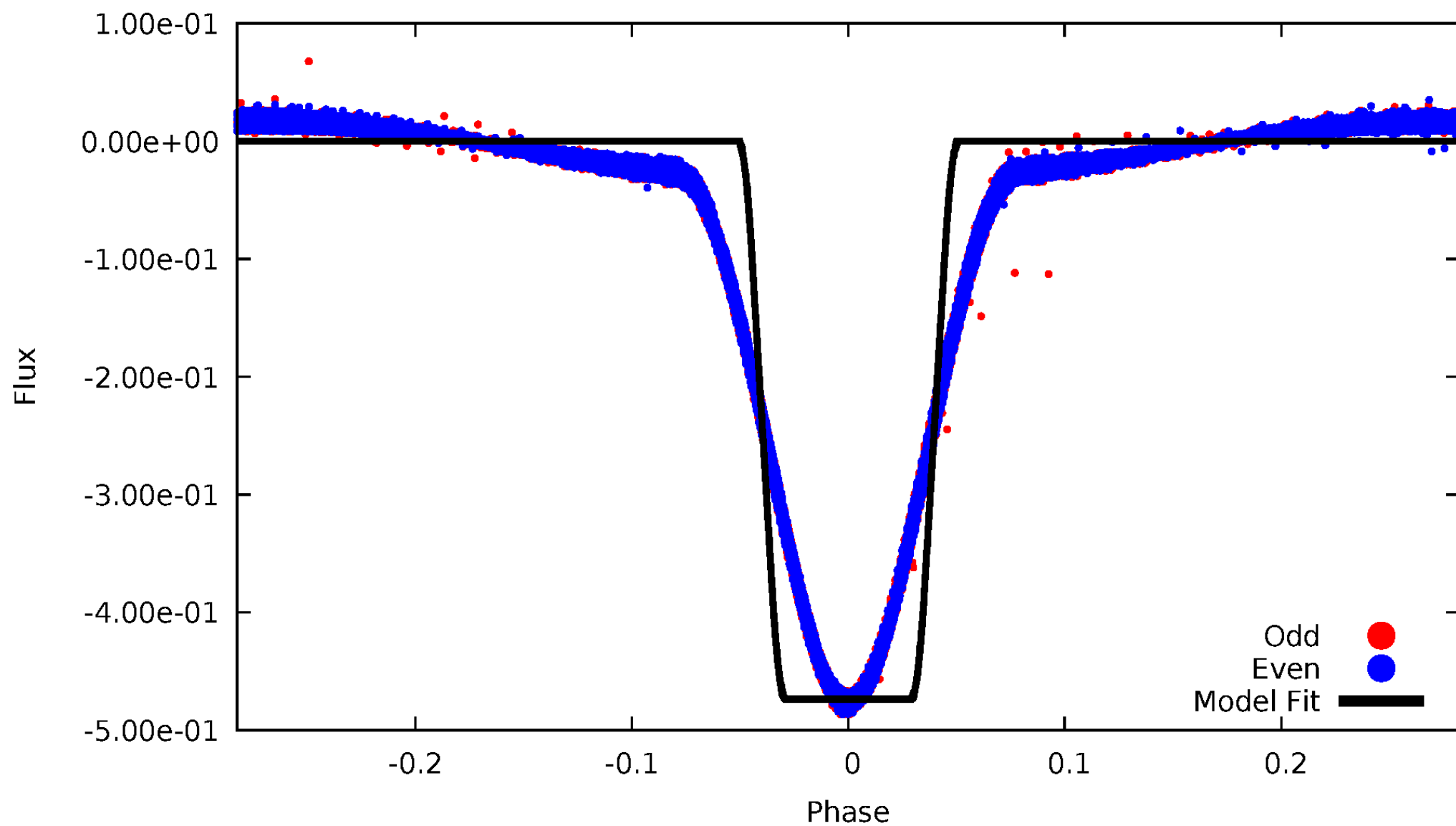
DV Odd/Even

TCE 004574310-01



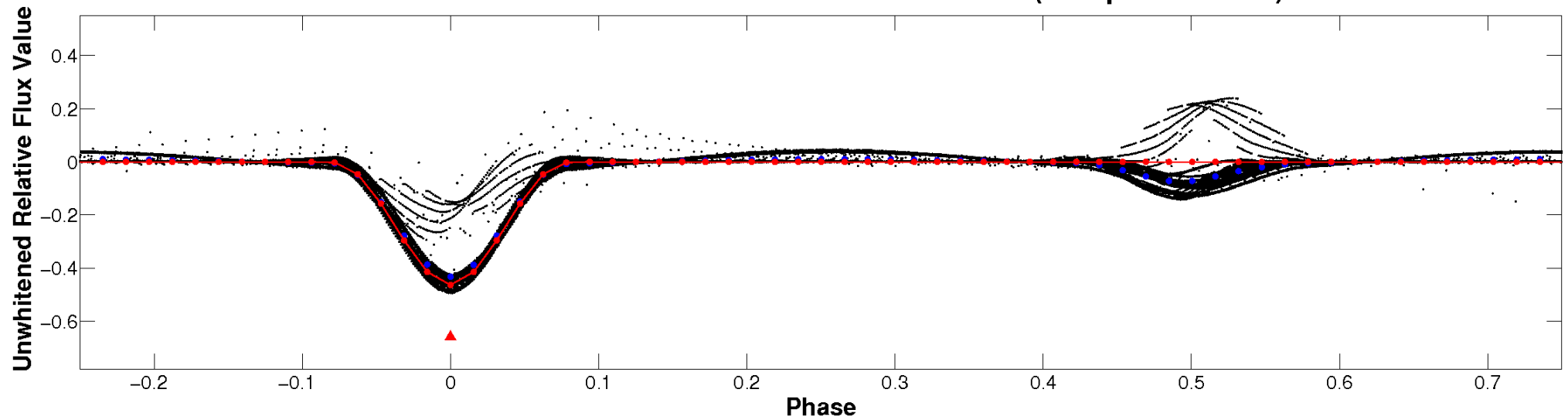
ALT Odd/Even

TCE 004574310-01

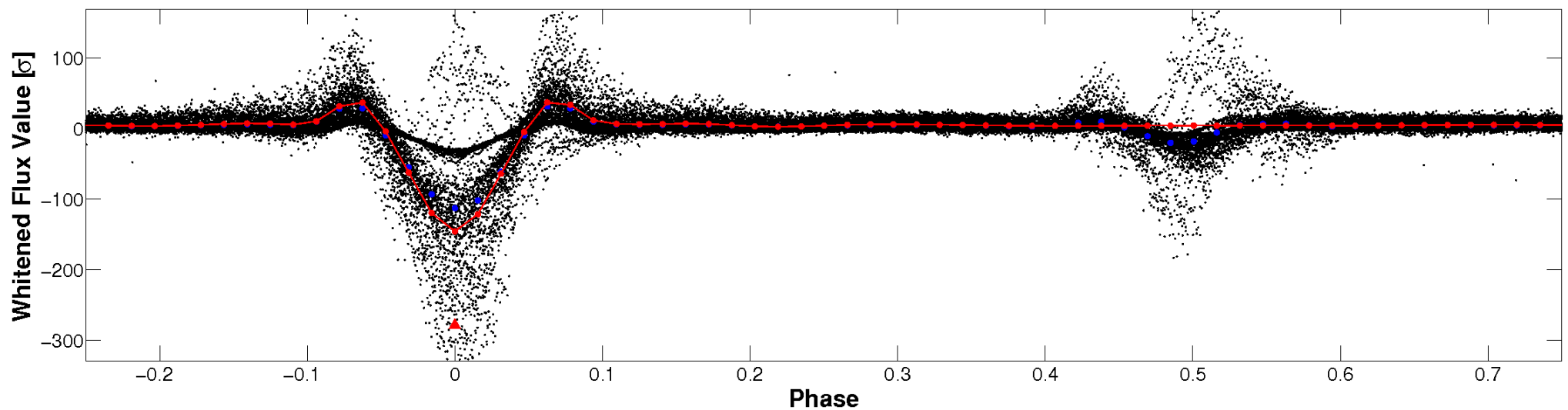


Non-Whitened Vs. Whitened Light Curve

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

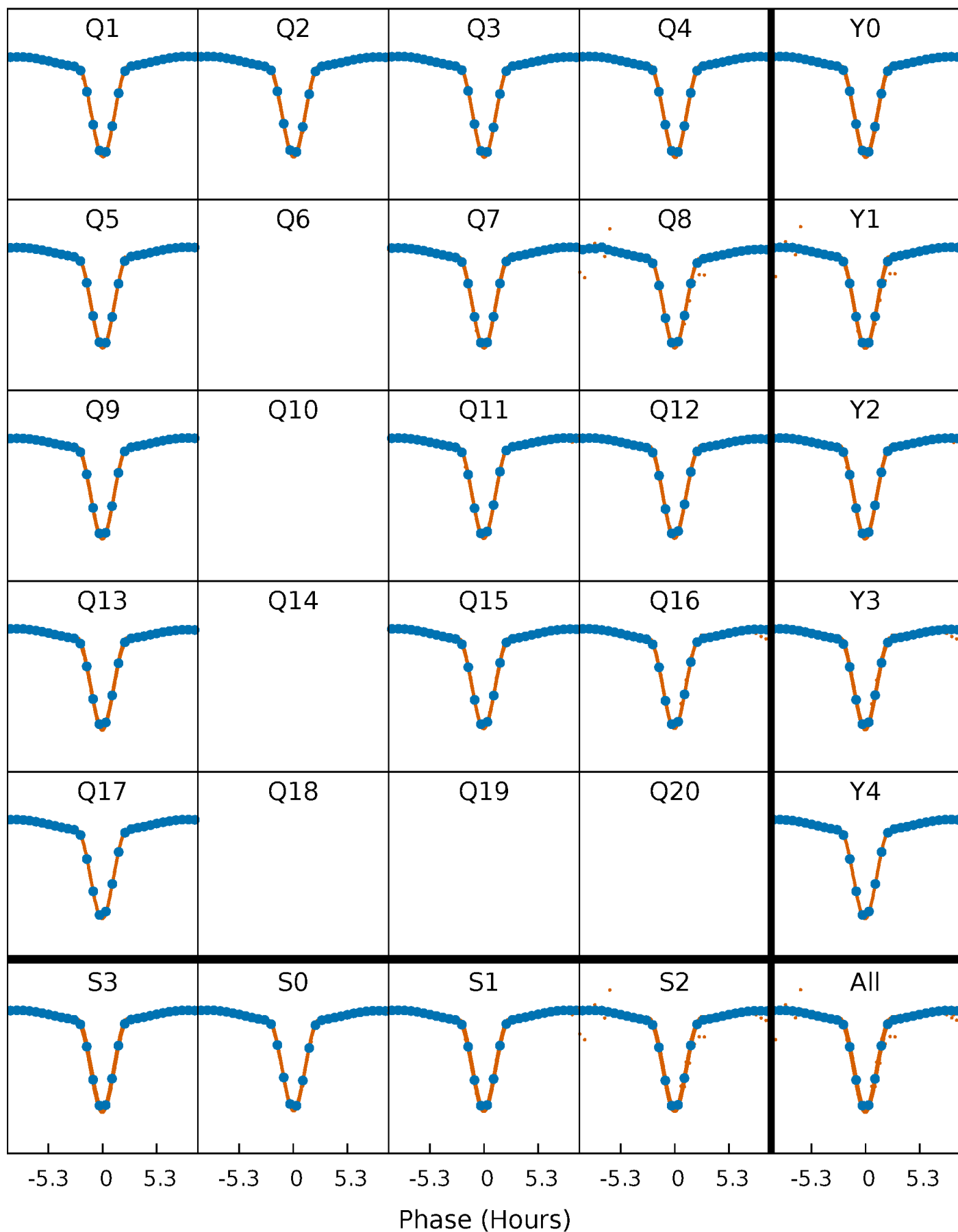


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



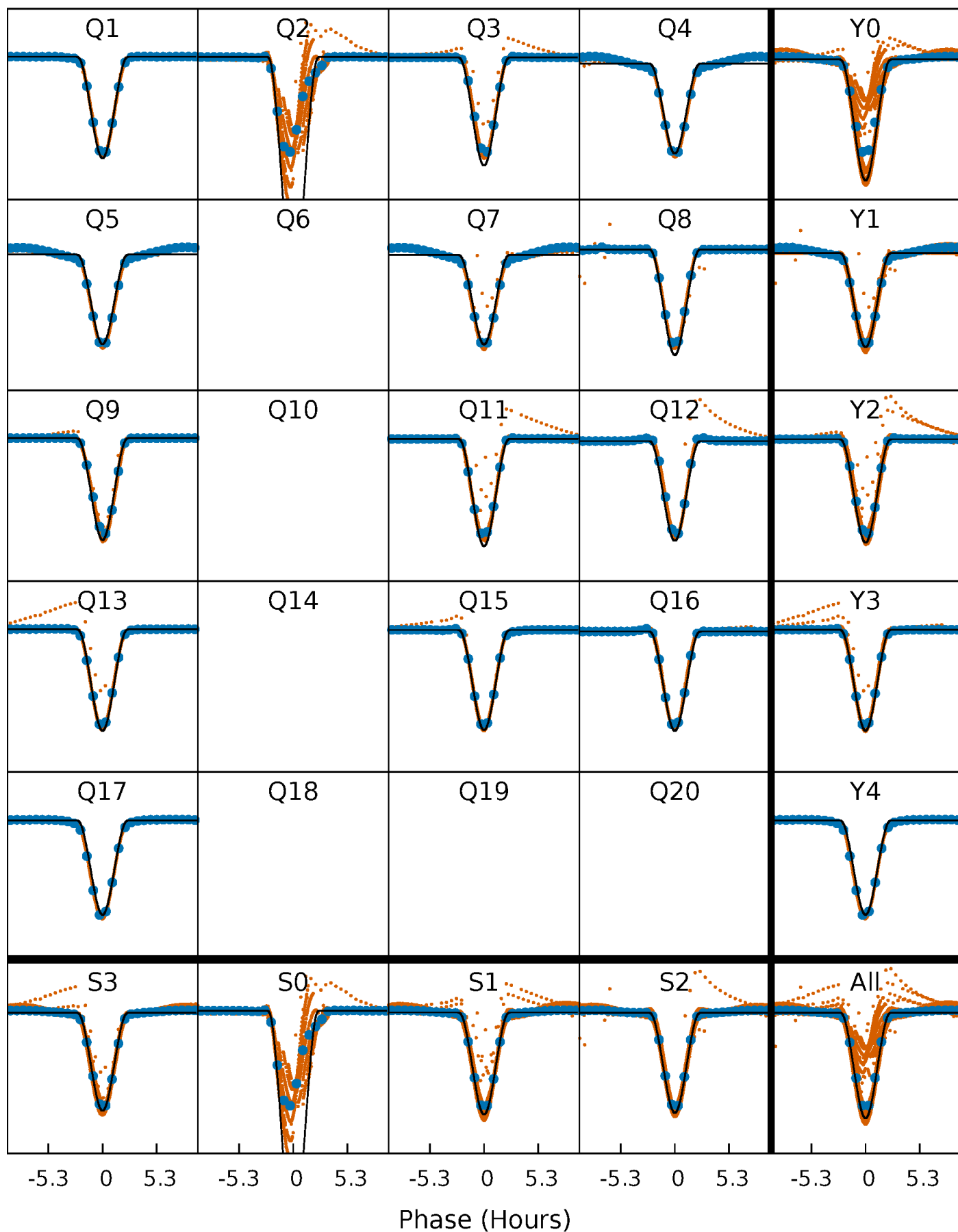
PDC Quarter-Phased Transit Curves

TCE 004574310-01 P= 1.306223 Days $T_0=132.110836$ (BKJD)



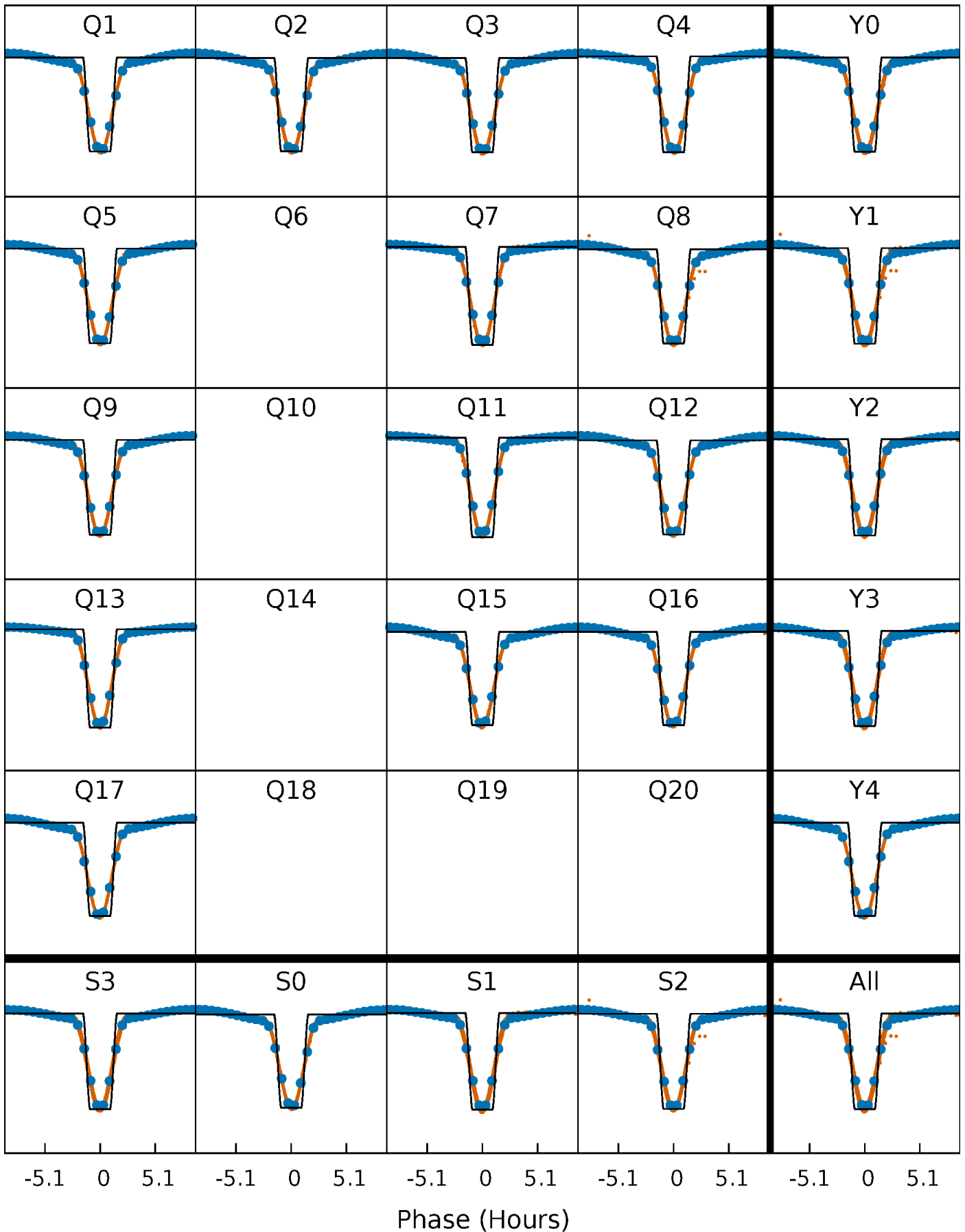
DV Quarter-Phased Transit Curves

TCE 004574310-01 P= 1.306223 Days $T_0=132.110836$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

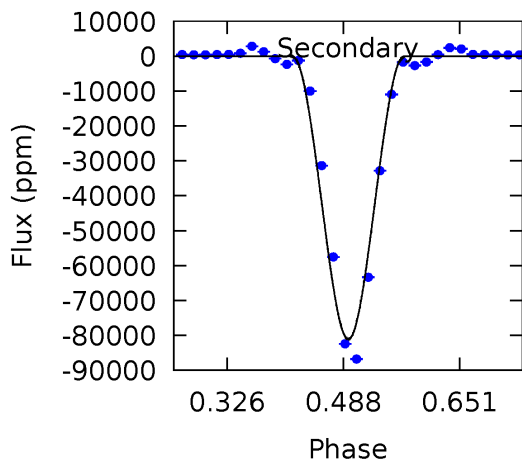
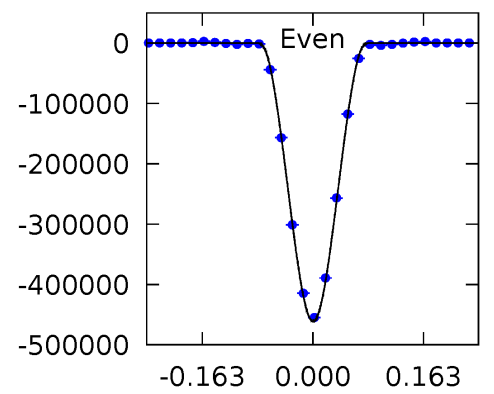
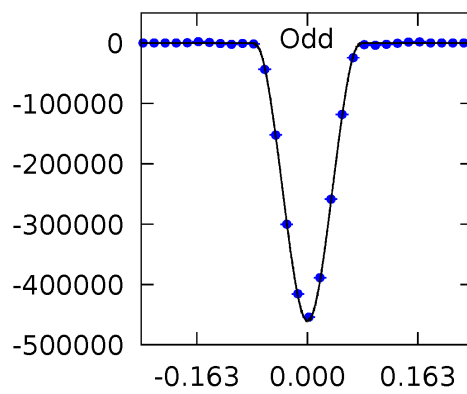
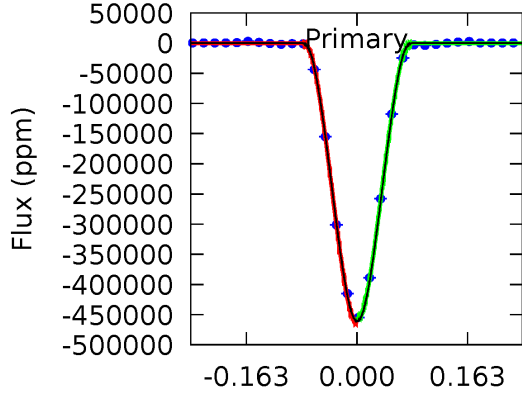
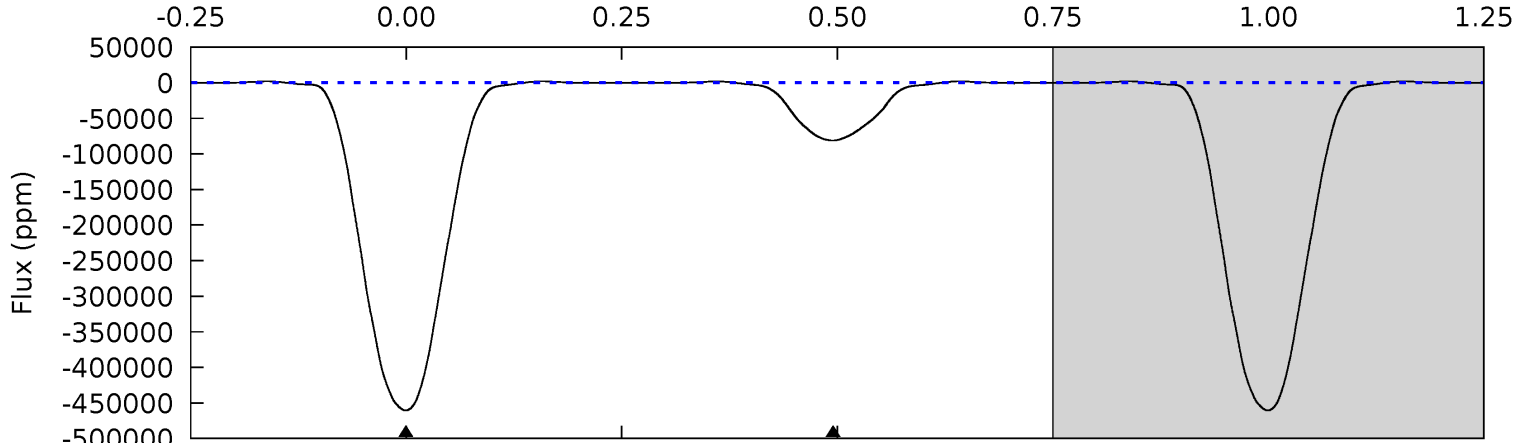
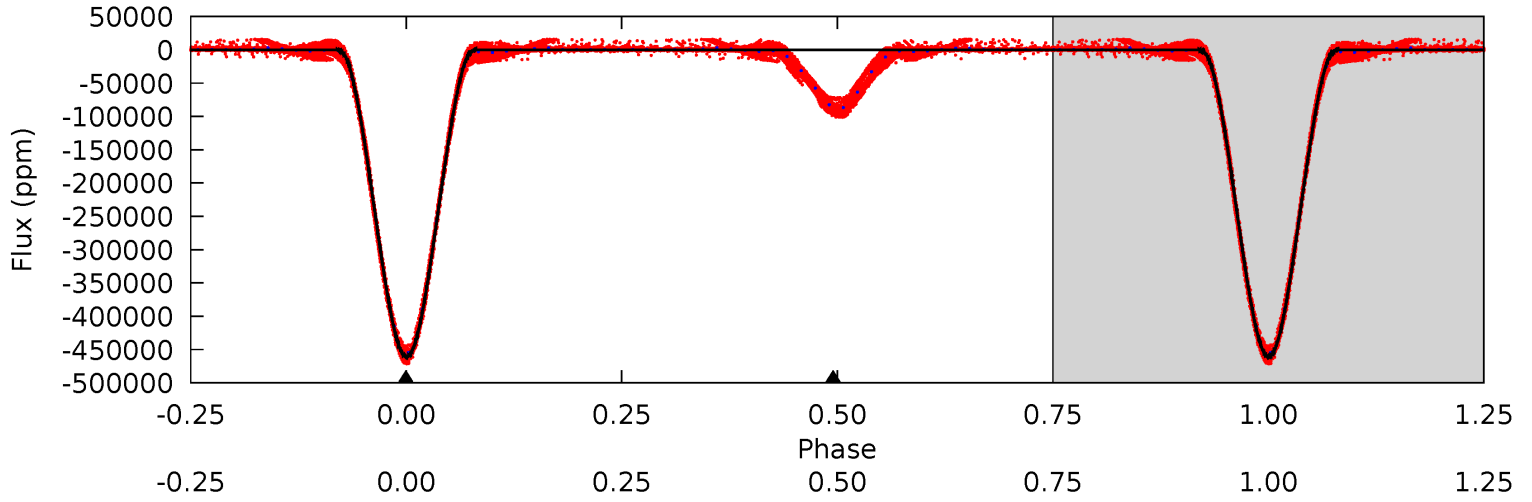
TCE 004574310-01 P= 1.306223 Days $T_0=132.110393$ (BKJD)



DV Model-Shift Uniqueness Test

004574310-01, P = 1.306223 Days, E = 130.804613 Days

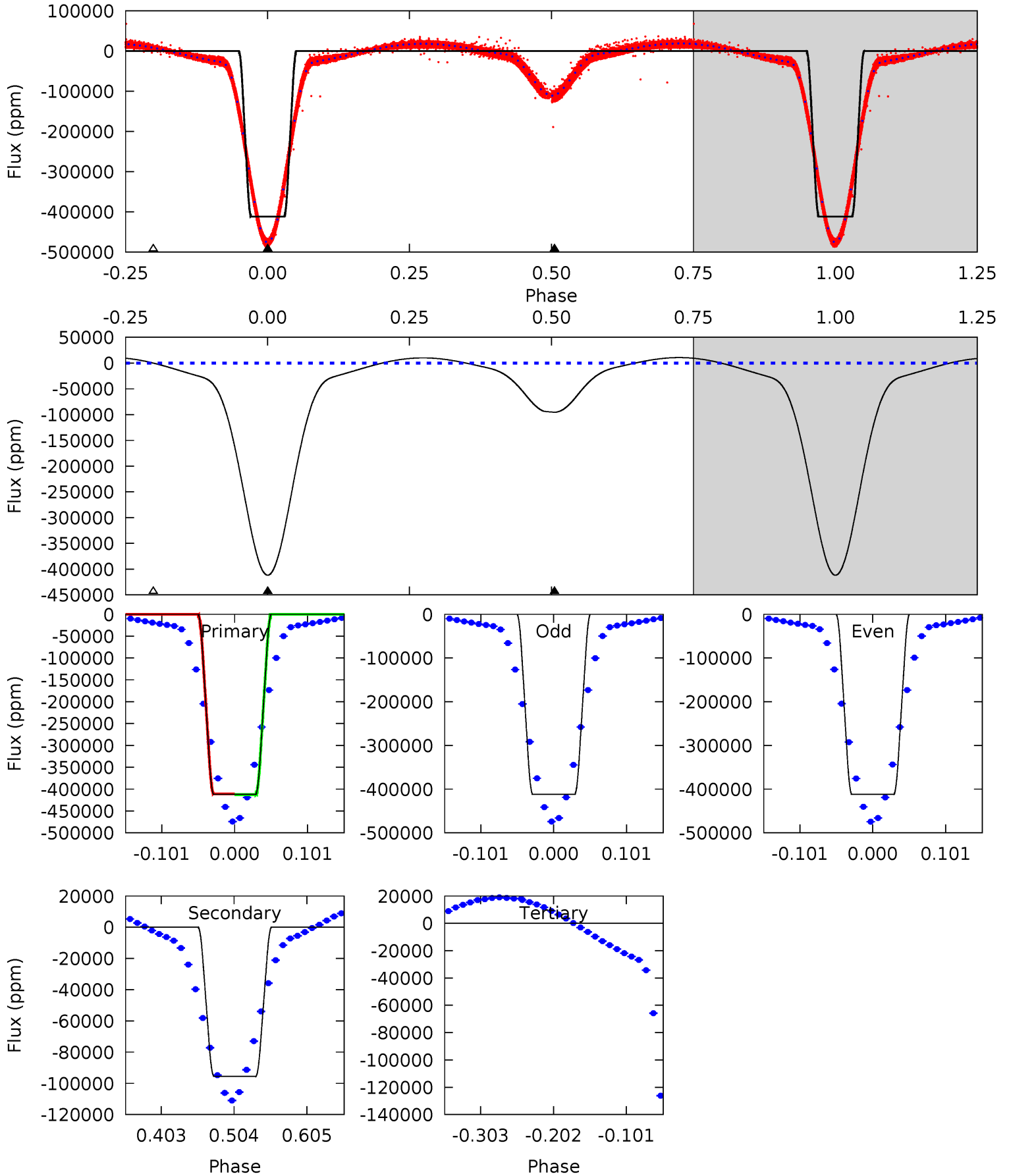
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14461	2546	0	0	4.46	1.40	17.4	14461	14461	2546	2546	13.0	0.96	0.00	127.3



Alt Model-Shift Uniqueness Test

004574310-01, P = 1.306223 Days, E = 130.804170 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2185	506.5	0.36	0	4.56	1.64	63.5	2184	2185	506.2	506.5	0.13	1.00	0.03	5.10



Stellar Parameters For KIC 004574310

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6600^{+178}_{-218}	$4.238^{+0.270}_{-0.180}$	$-1.520^{+0.300}_{-0.250}$	$1.124^{+0.247}_{-0.302}$	$0.796^{+0.082}_{-0.041}$	$0.790^{+1.208}_{-0.361}$
	+3%/-3%	+6%/-4%	+20%/-16%	+22%/-27%	+10%/-5%	+153%/-46%
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 004574310-01 / KOI 6427.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-81102 ± 32	$122.58^{+15.53}_{-19.51}$	2926^{+197}_{-246}	3799^{+82}_{-89}	$1.542^{+0.615}_{-0.315}$
Alt.	-95464 ± 188	$85.05^{+12.00}_{-12.15}$	2925^{+206}_{-242}	4604^{+93}_{-120}	$3.815^{+1.379}_{-0.815}$

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

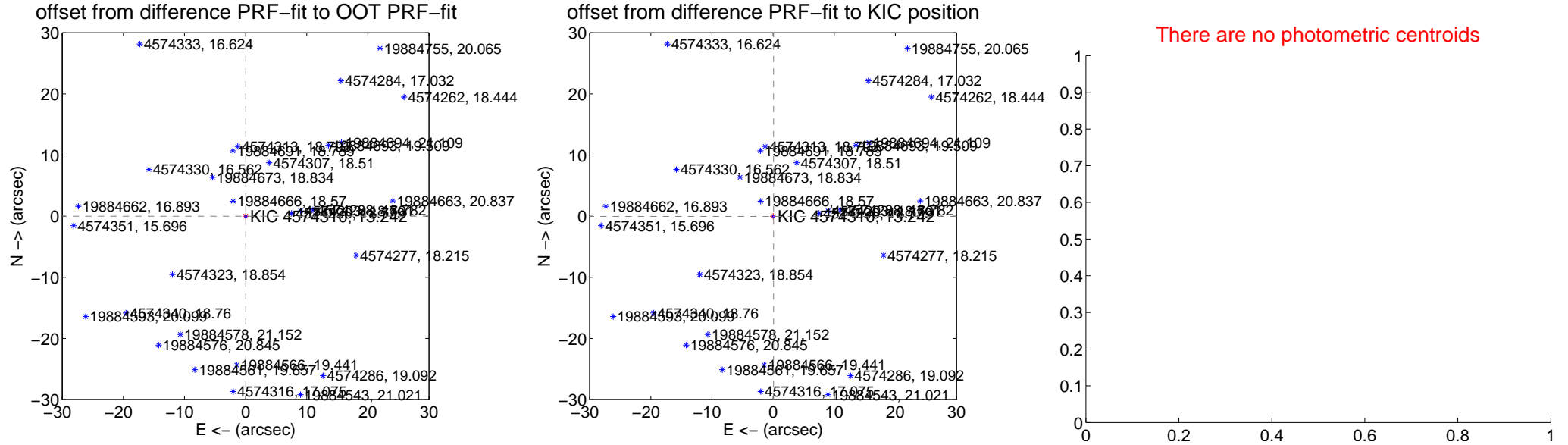
DV Centroid Data

Supplemental centroid analysis for 004574310-01. Kepler magnitude: 13.24. Transit SNR 3803.05

There are 14 quarters with good PRF difference image offsets

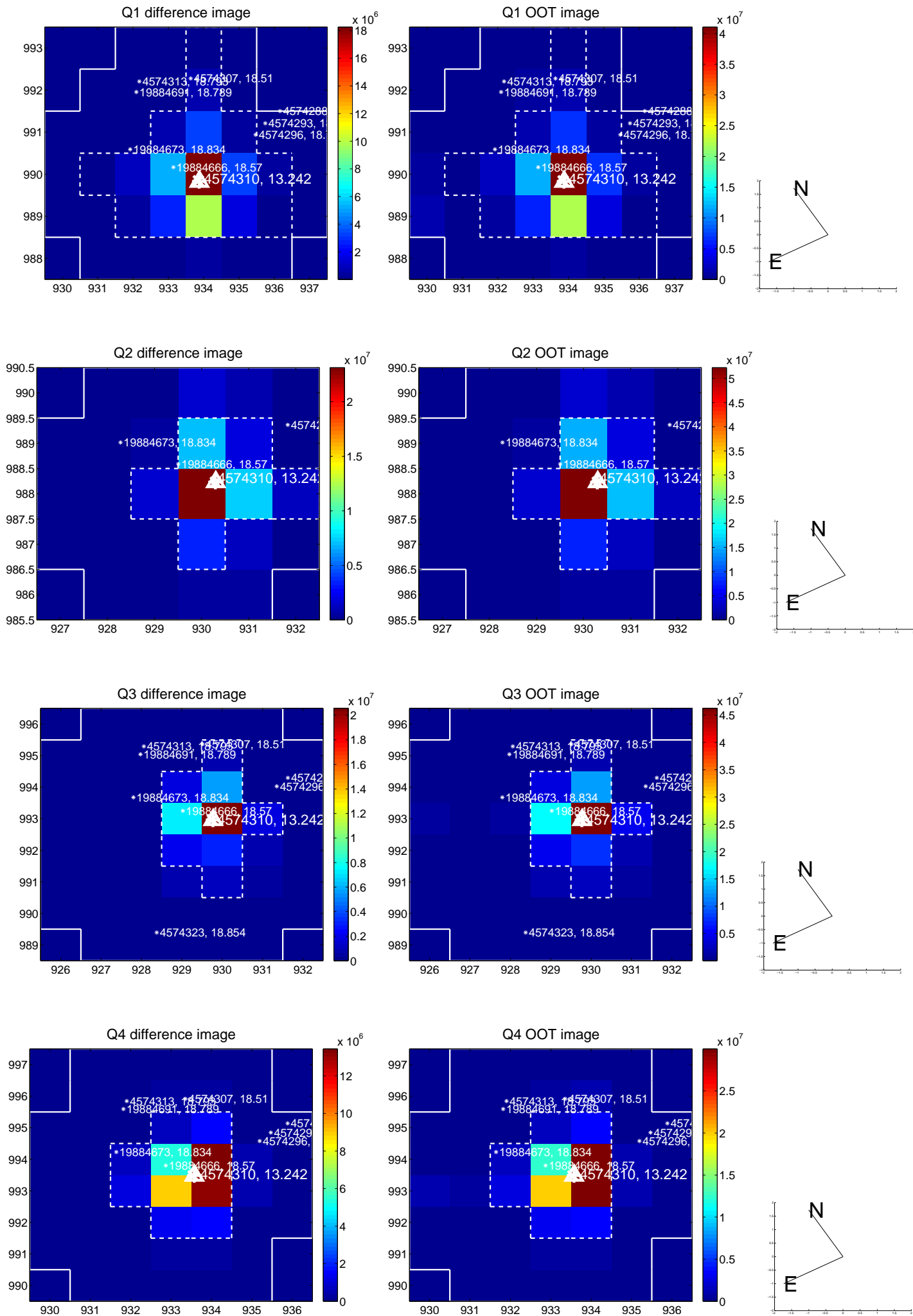
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.025 ± 0.067	0.38	-0.024 ± 0.067	-0.009 ± 0.067
PRF-fit source offset from KIC position	0.091 ± 0.068	1.34	-0.082 ± 0.068	-0.039 ± 0.068
photometric centroid source offset	—	—	—	—

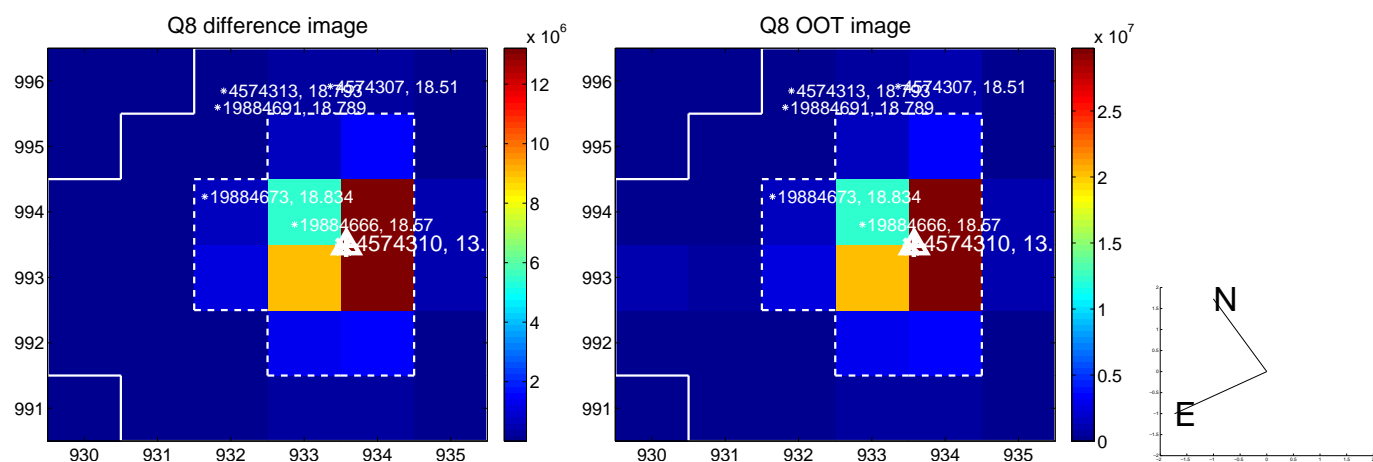
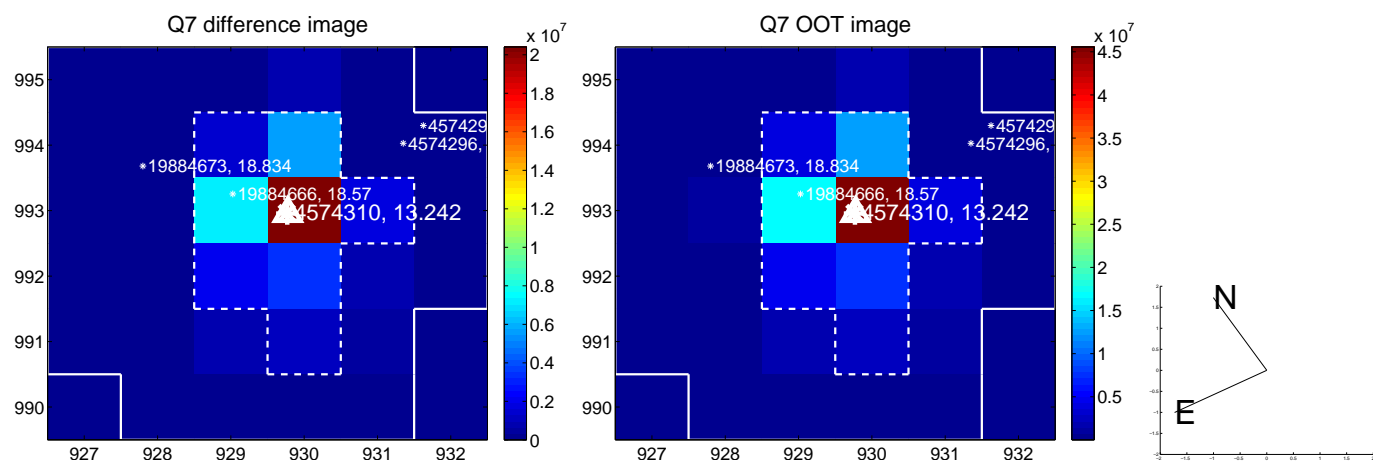
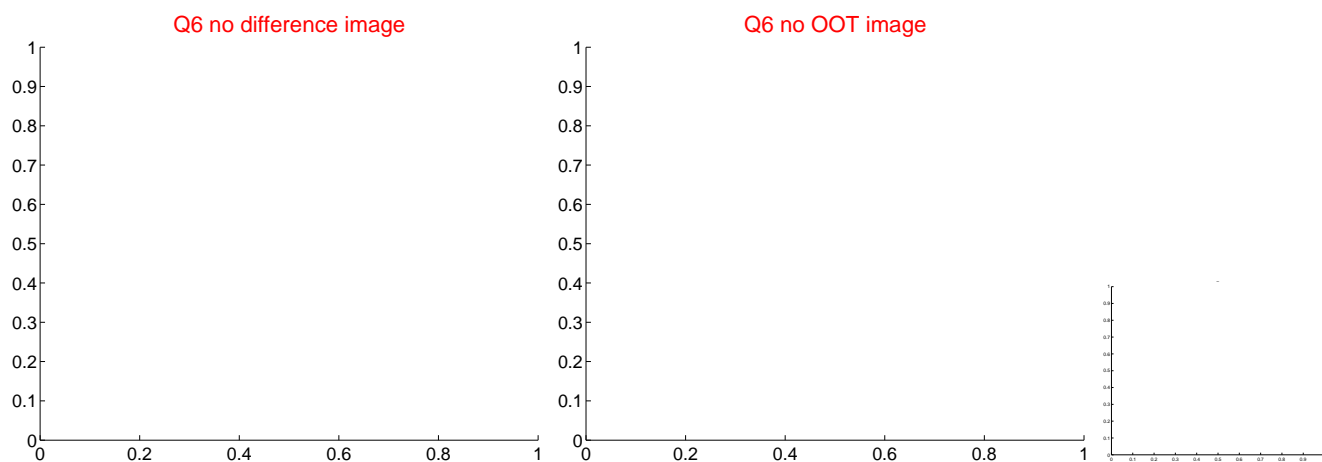
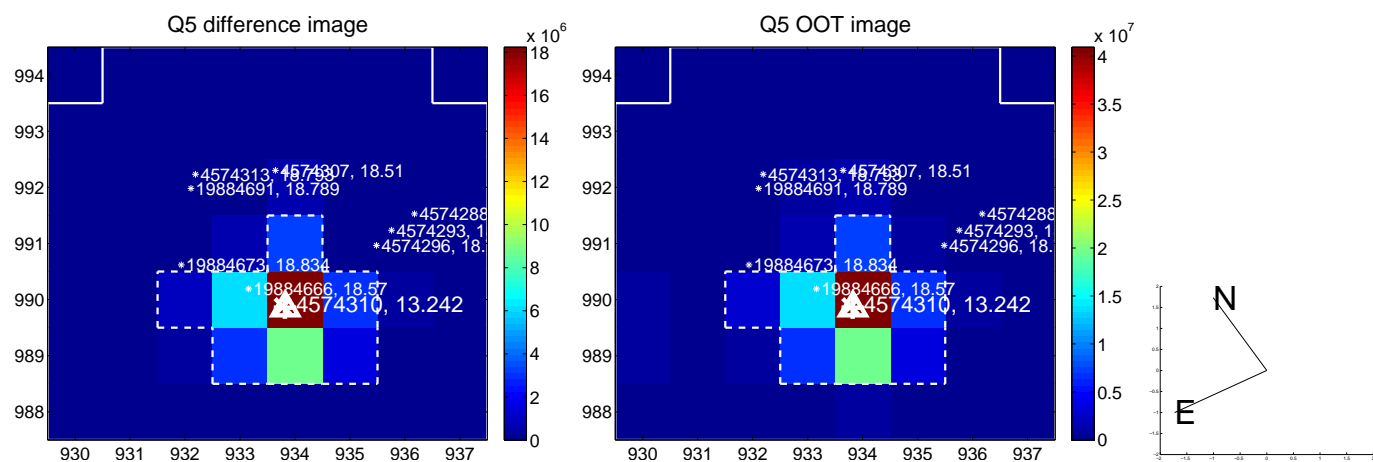


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

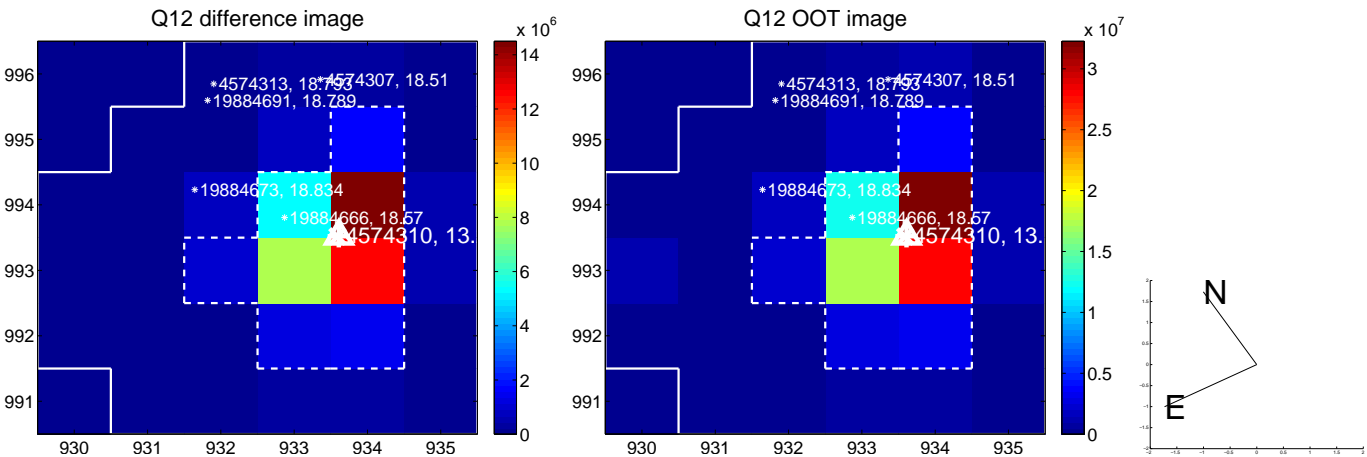
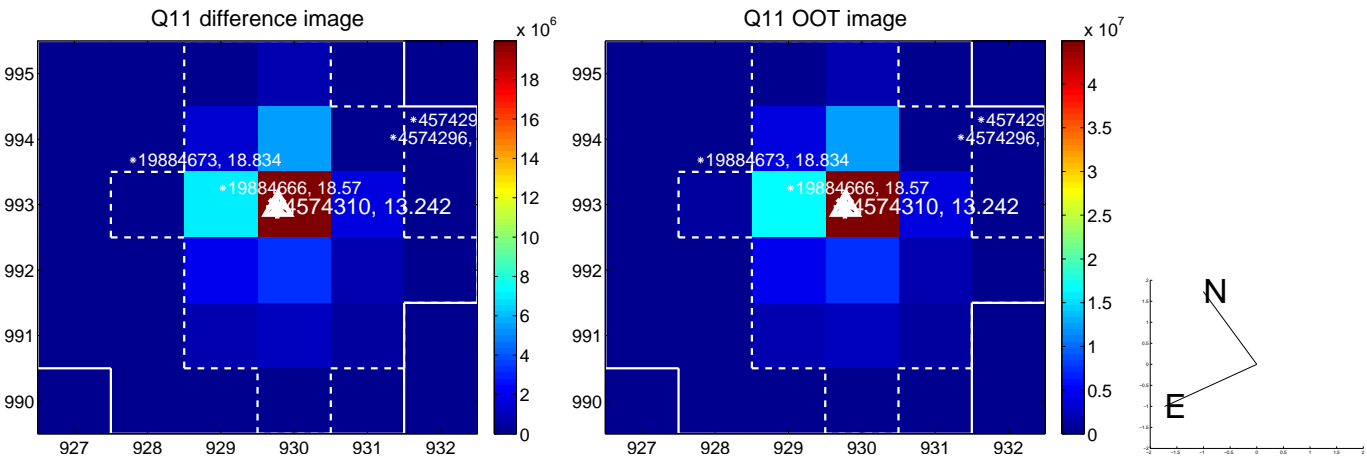
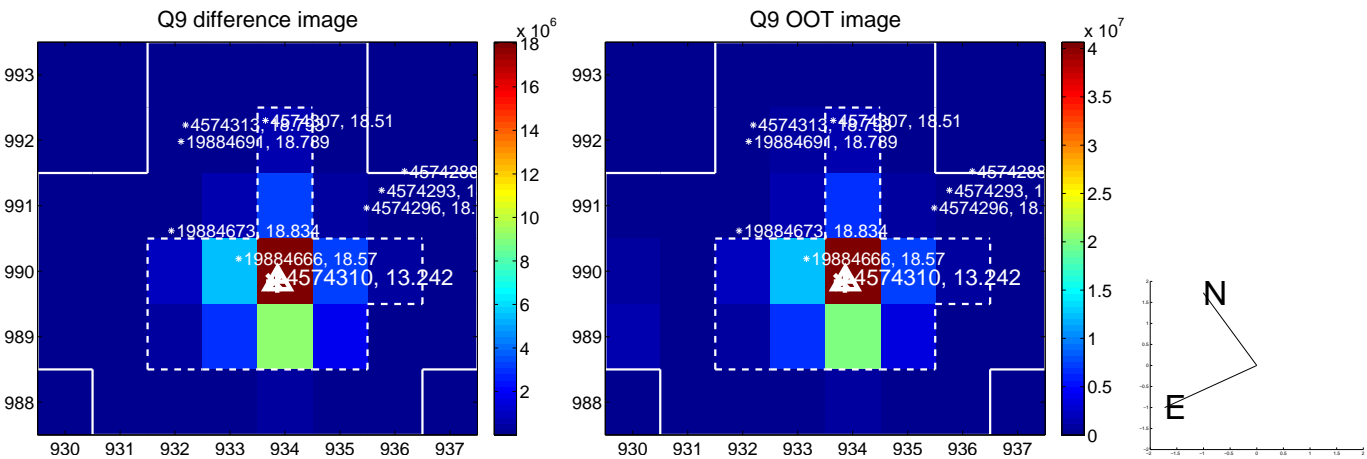
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



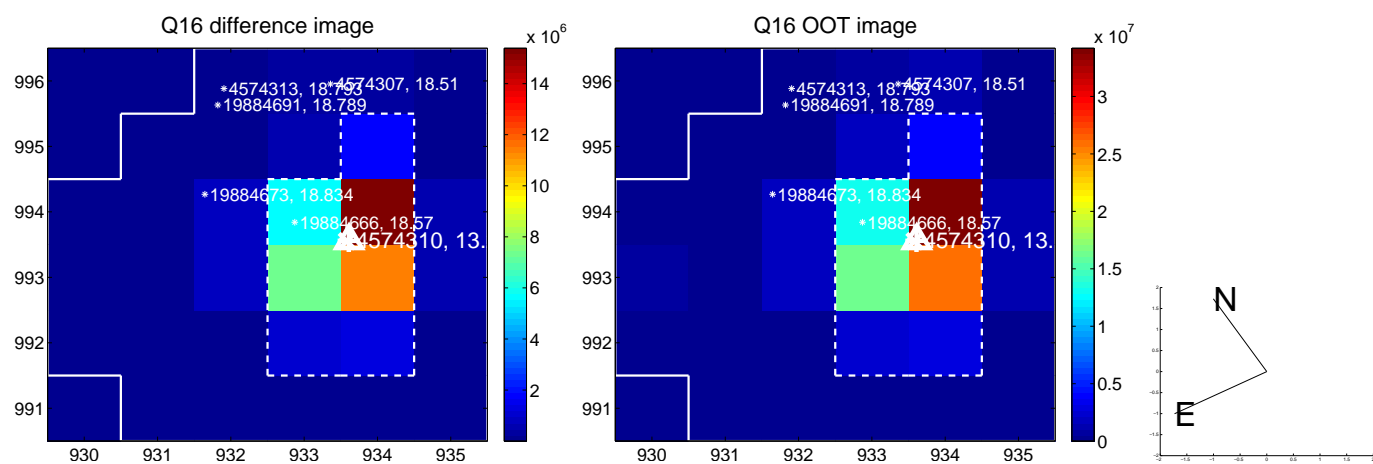
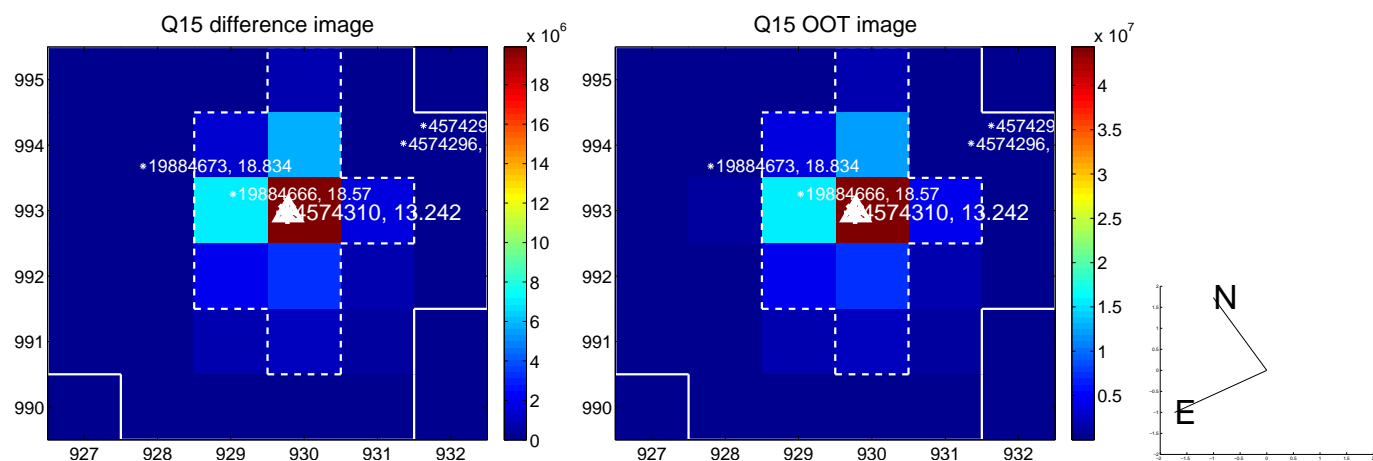
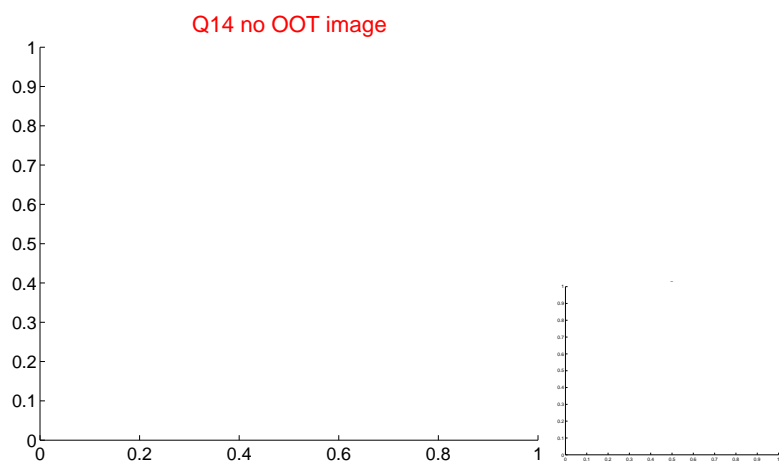
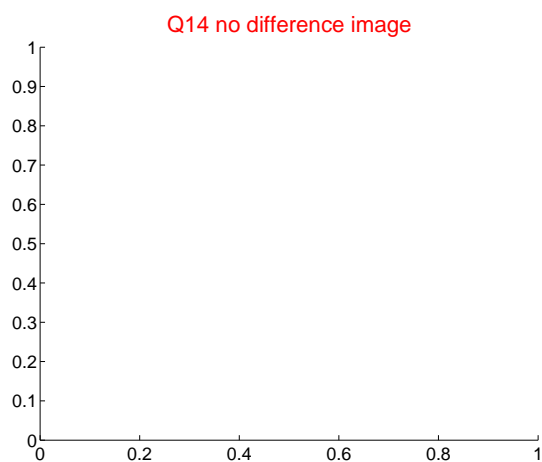
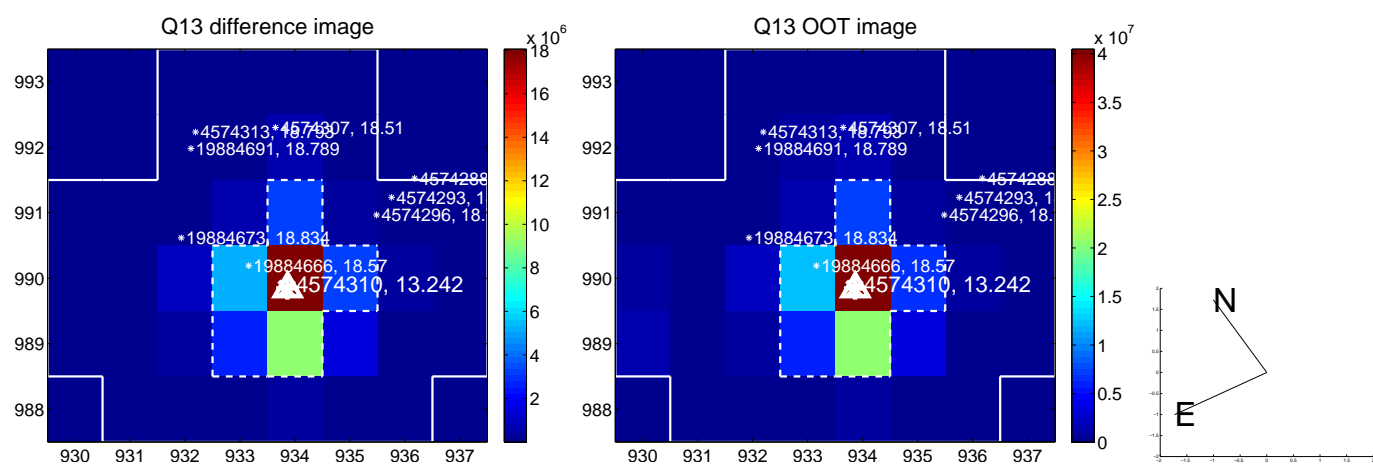
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



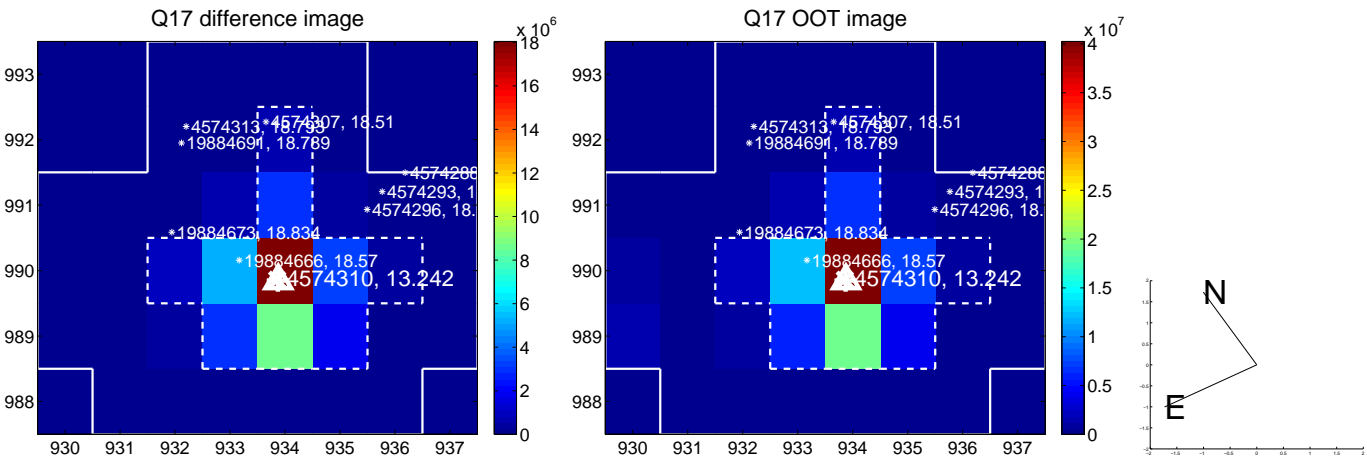
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



folded centroid time series figure for this object.

UKIRT Image

Declination

