

KIC 005023956

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})
005023956-01	OBS	0233.01	1.824638	132.891481	4169.7	3.826	763.6	291.8	0.79	6190	9.26	1223.50

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005023956-01	OBS	FP	0.00	0	1	1	1	MOD_ODDEVEN_DV—DEEP_V_SHAPED—SEASONAL_DEPTH_DV—SEASONAL_DEPTH_ALT—CENT_RESOLVED_OFFSET—EPHEM_MATCH

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.

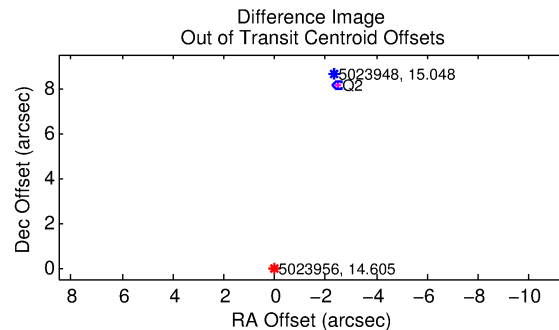
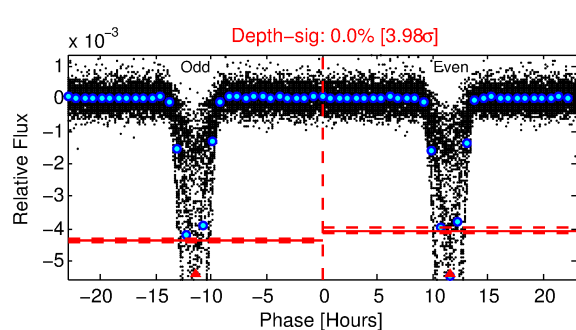
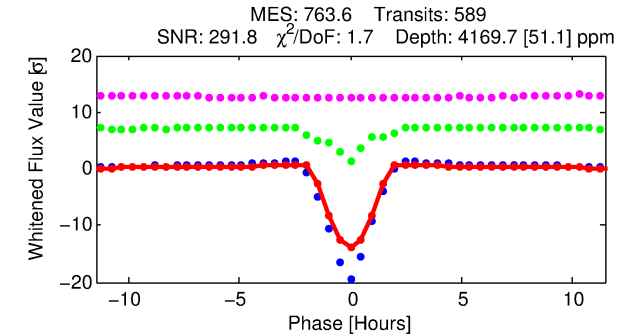
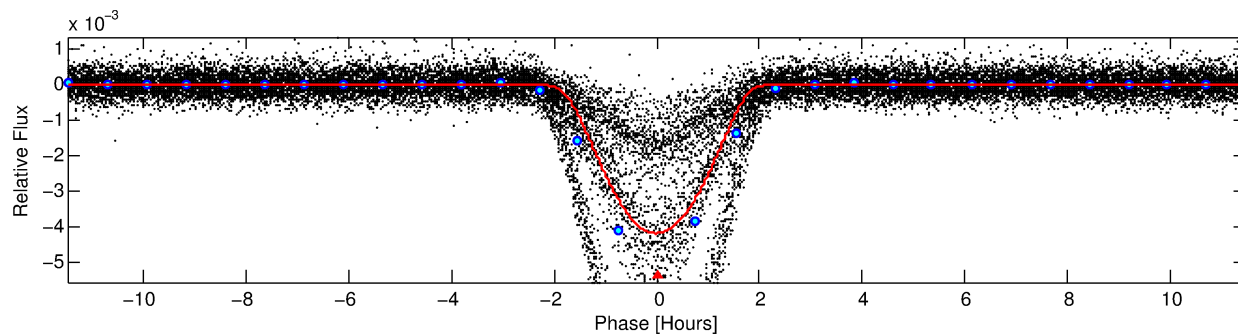
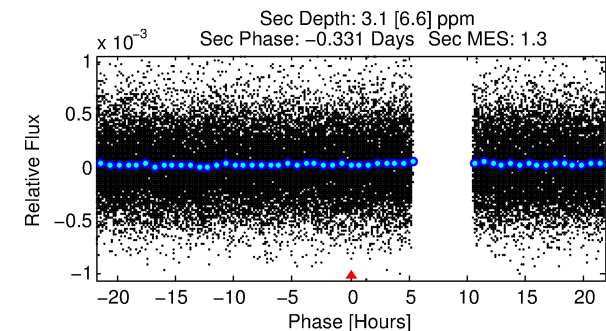
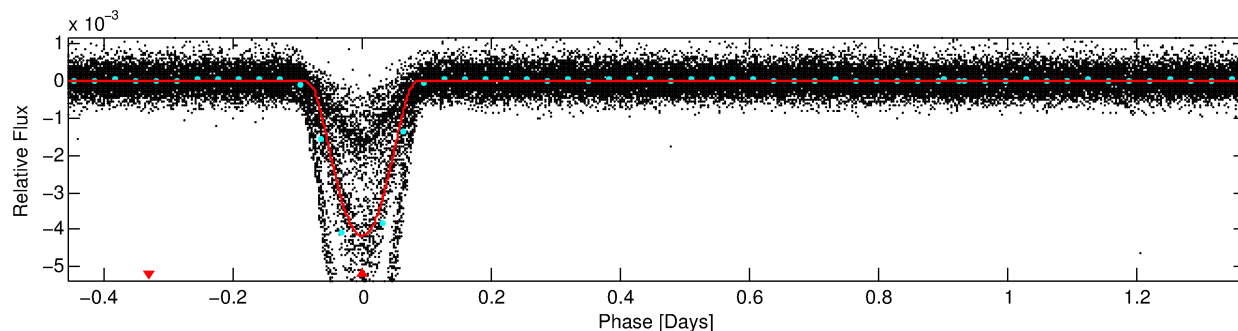
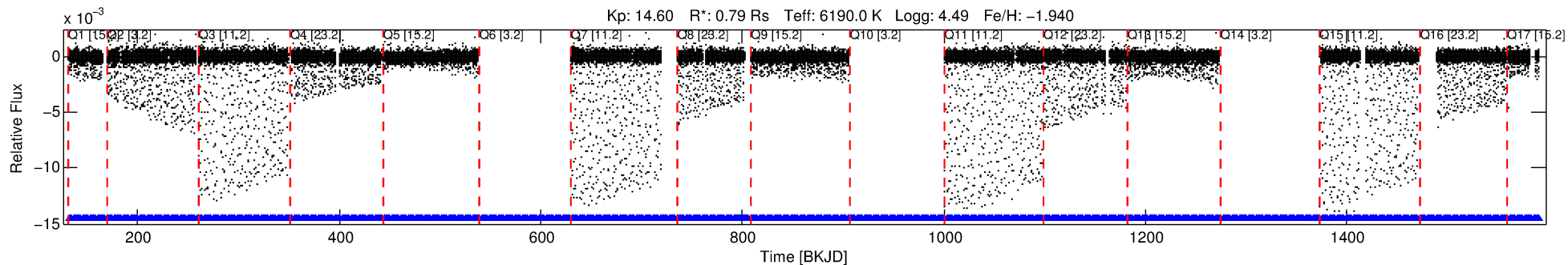
Ephemeris Match Information For 005023956-01

TCE (1)	KIC	Parent (2)	Parent KIC	$P_1:P_2$	Dist ($''$)	Δ Row	Δ Col	m_2	m_1	D_2/D_1	Mechanism	Flag	σ_P	σ_T
005023956-01	5023956	3570.01	5023948	1:1	8.9	2	0	15.05	14.61	44.37	Direct-PRF	0	0.61	0.49

Notes: $P_1:P_2$ is the period ratio. Dist is the distance in arcseconds. Δ Row and Δ Col are the number of pixels apart in row and column. m_2 and m_1 are the magnitudes of the parent and child. D_2/D_1 is the parent's transit depth divided by the child's. σ_P and σ_T are the significance of the match in period and epoch. For a match to be considered significant $\sigma_P < 5.0$ and $\sigma_T < 5.0$. Matches which have σ_P and σ_T very close to this cutoff should receive extra scrutiny, especially if the period ratio is very large.

DV One-Page Summary

KIC: 5023956 Candidate: 1 of 1 Period: 1.825 d
KOI: K00233.01 Corr: 0.951



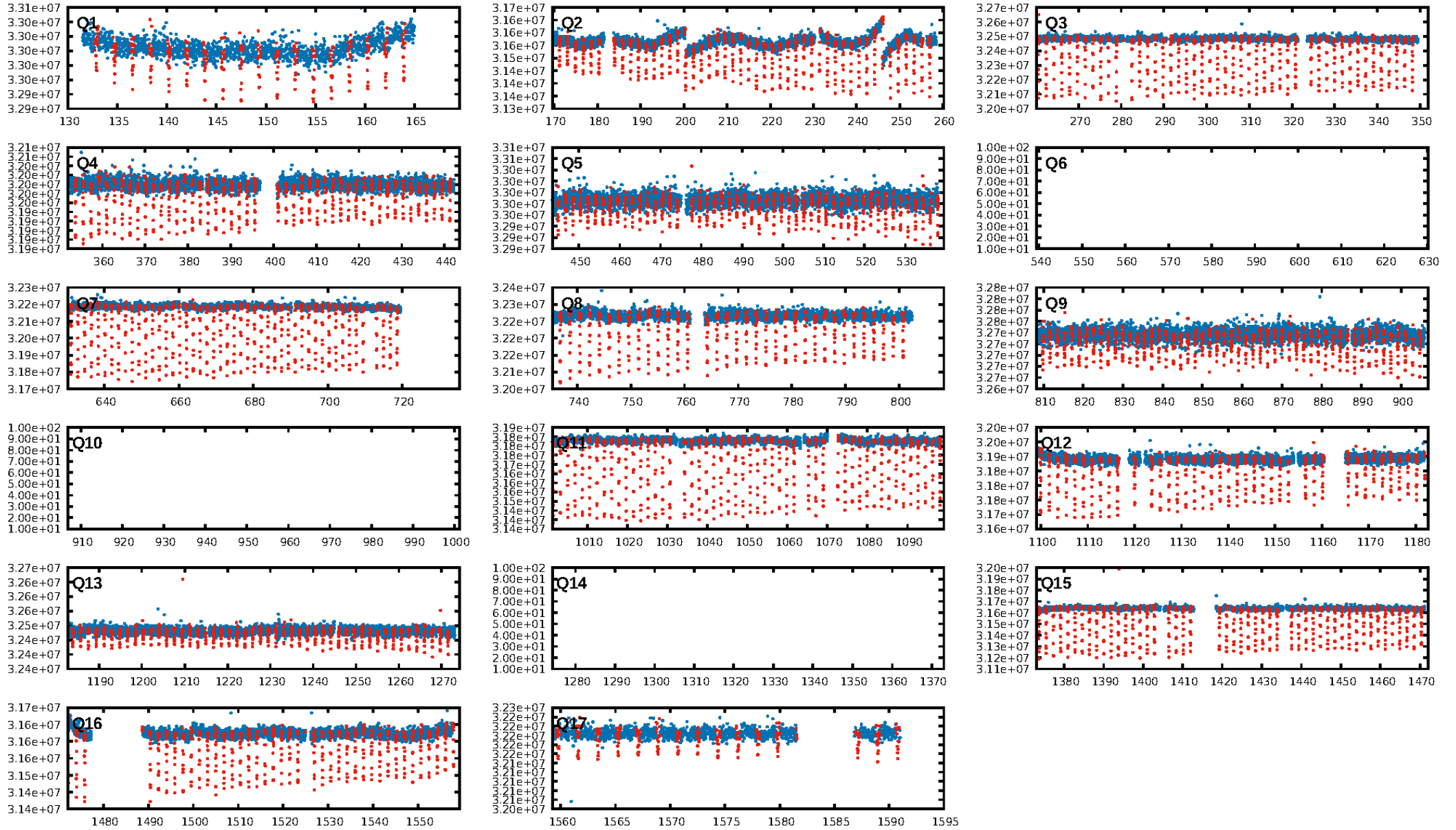
DV Fit Results:

Period = 1.82464 [0.00000] d
Epoch = 132.8915 [0.0001] BKJD
Rp/R* = 0.1070 [0.0124]
a/R* = 2.02 [0.03]
b = 1.00 [0.02]
Seff = 1223.50 [314.11]
Teq = 1508 [97] K
Rp = 9.26 [1.62] Re
a = 0.0260 [0.0035] AU
Ag = 0.01 [0.03] [-33.97 σ]
Teff = 792 [430] K [-1.62 σ]

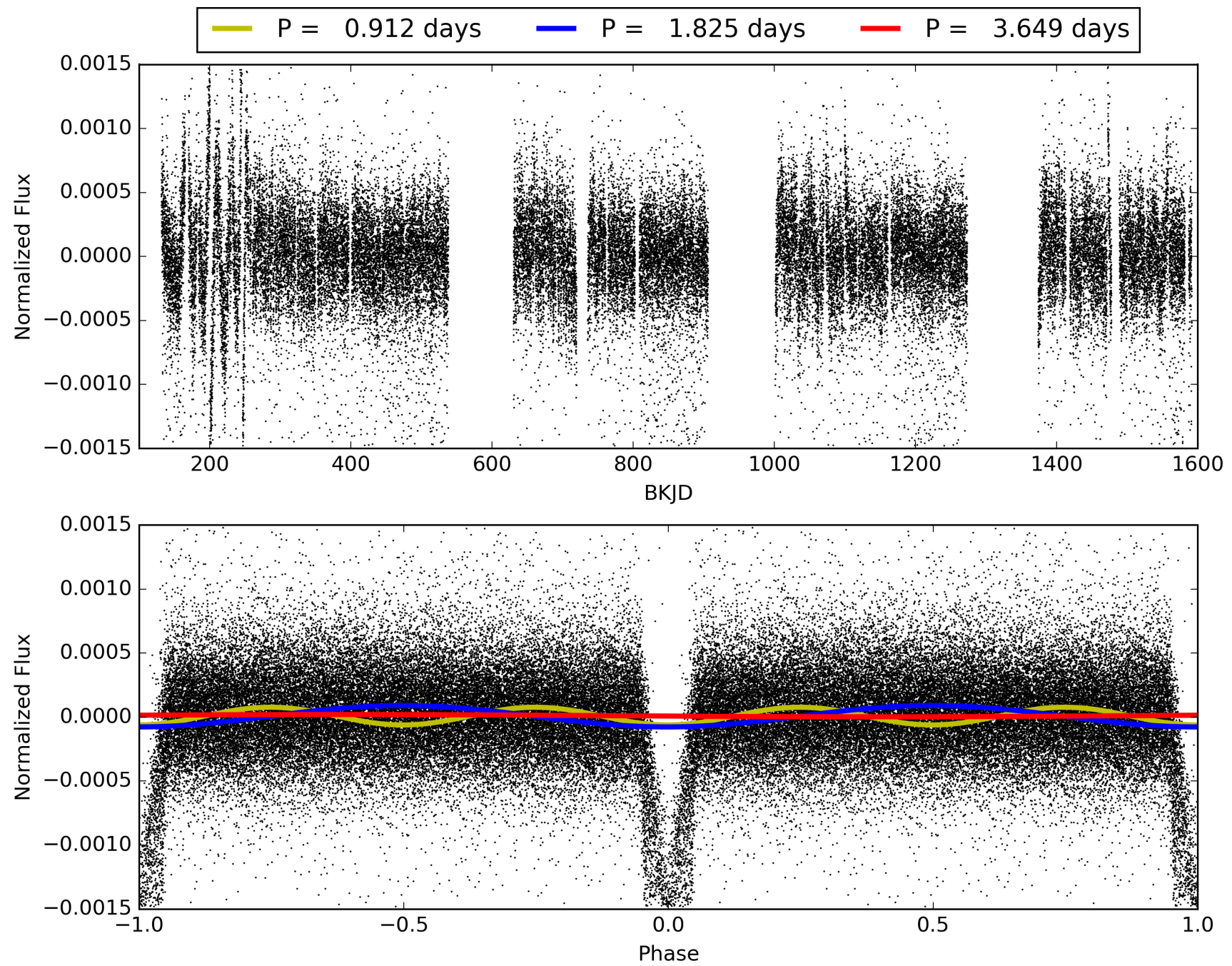
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [555/555]
GhostDiagnostic-chr: -0.2614
Centroid-sig: 0.0%
Centroid-so: 58.500 arcsec [2110.83 σ]
OotOffset-rm: 8.504 arcsec [127.50 σ]
KicOffset-rm: 8.729 arcsec [130.86 σ]
OotOffset-st: 1/0/0/0 [1]
KicOffset-st: 1/0/0/0 [1]
DiffImageQuality-fgm: 1.00 [1/1]
DiffImageOverlap-fno: 1.00 [14/14]

TCE 005023956-01, PDC Light Curves

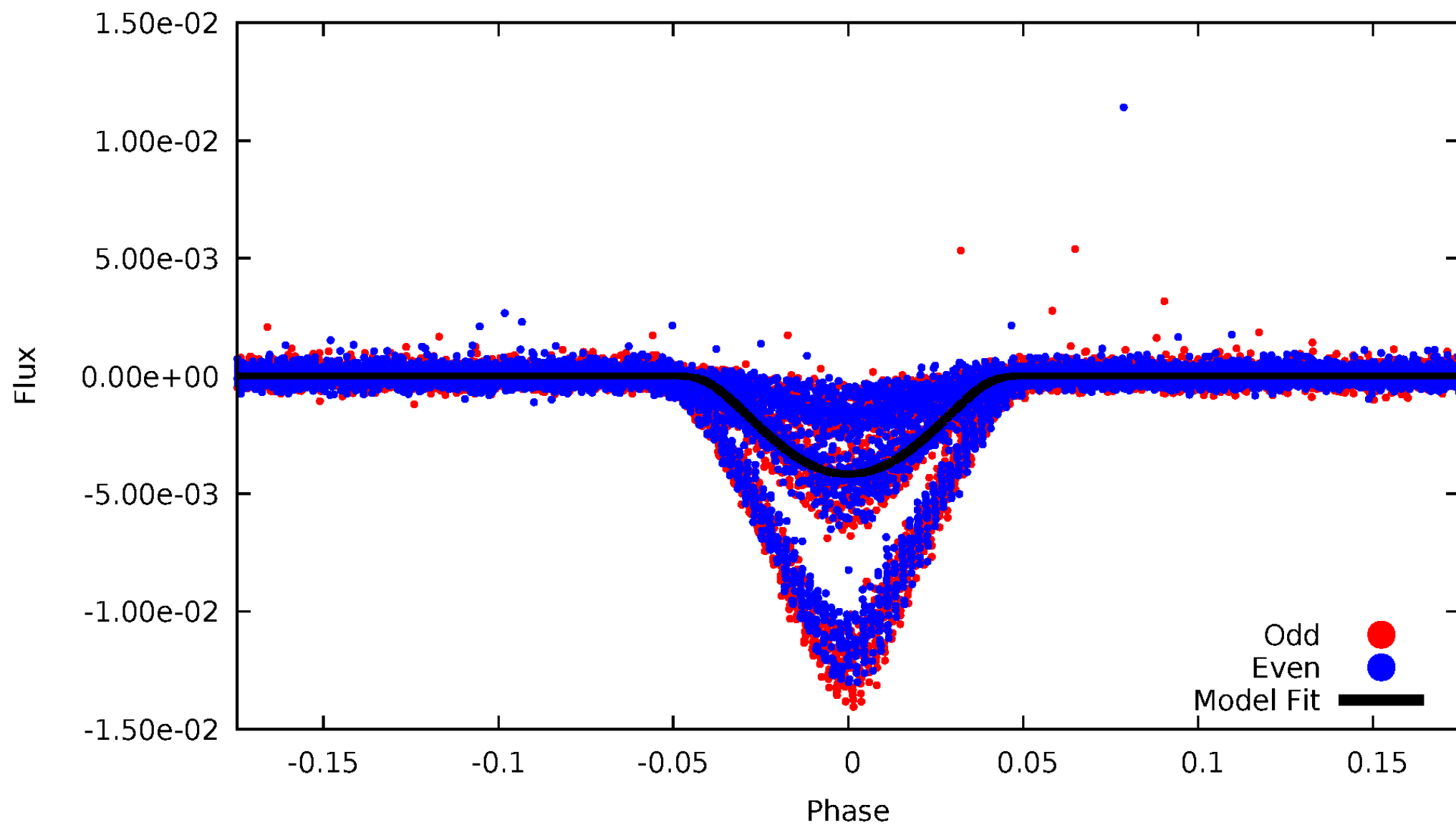


TCE 005023956-01



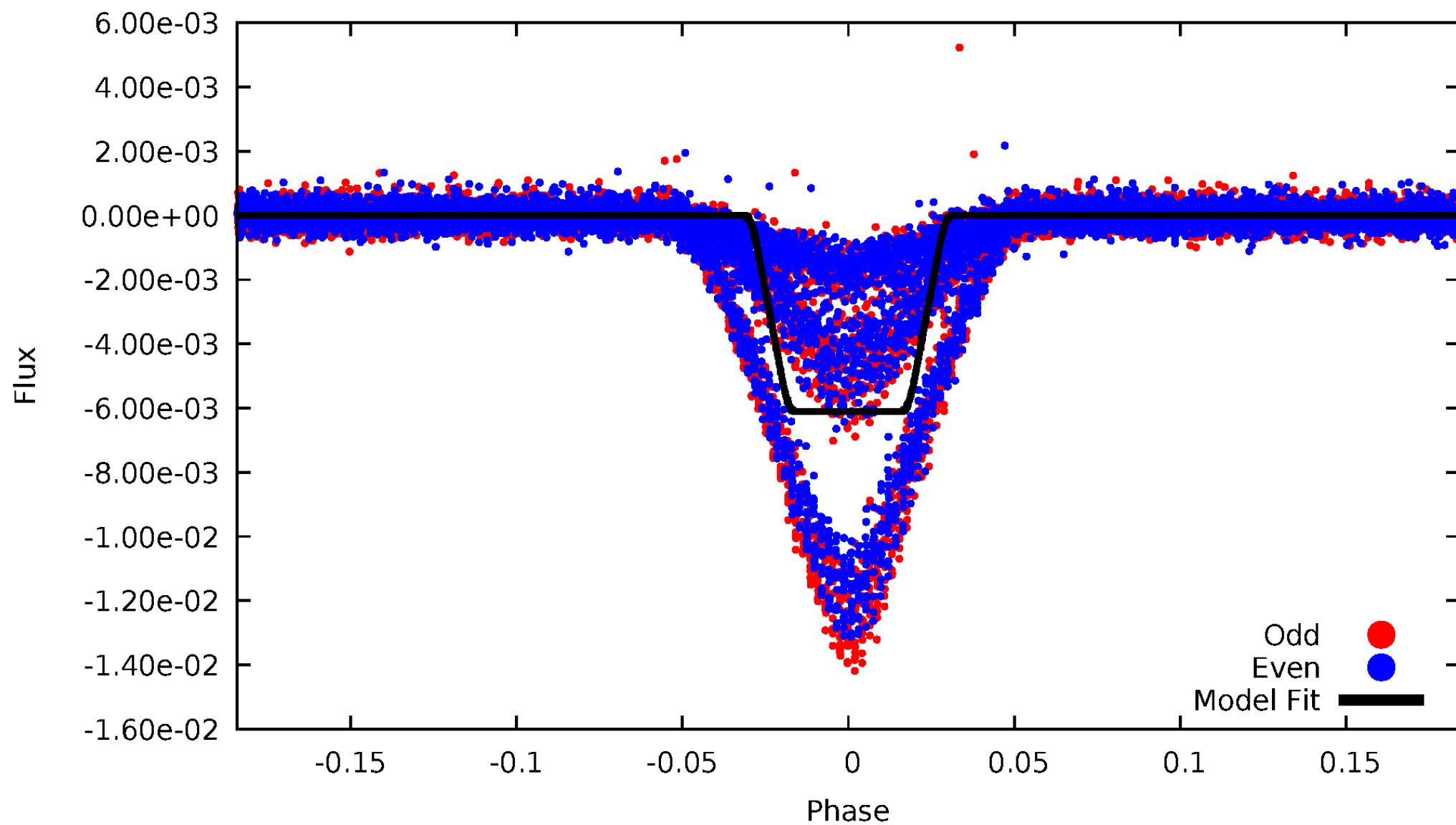
DV Odd/Even

TCE 005023956-01

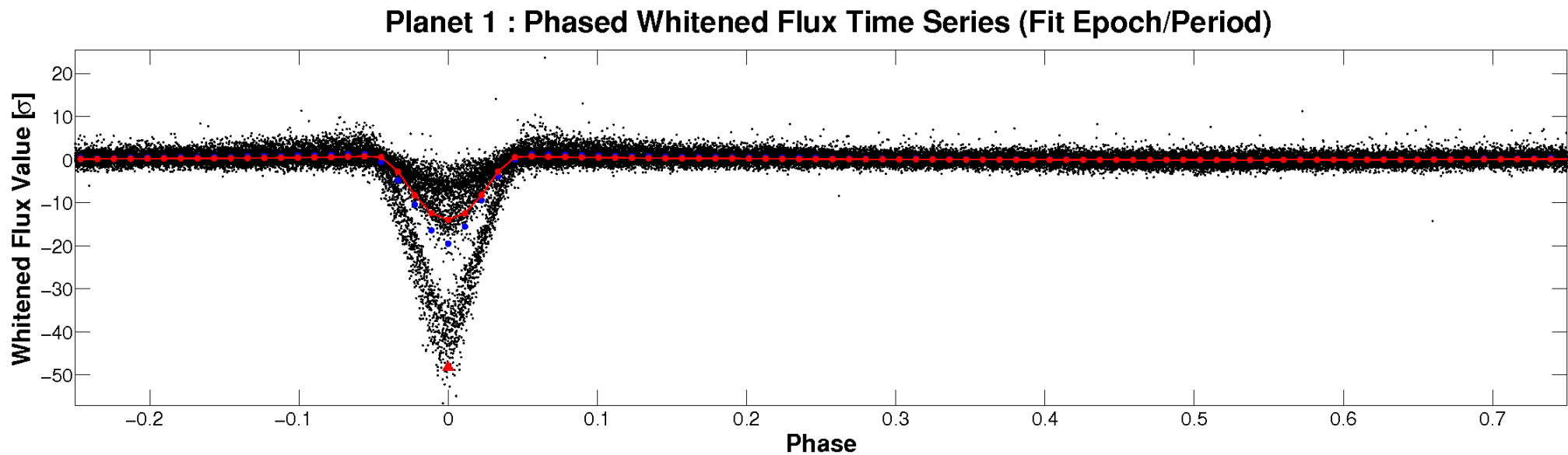
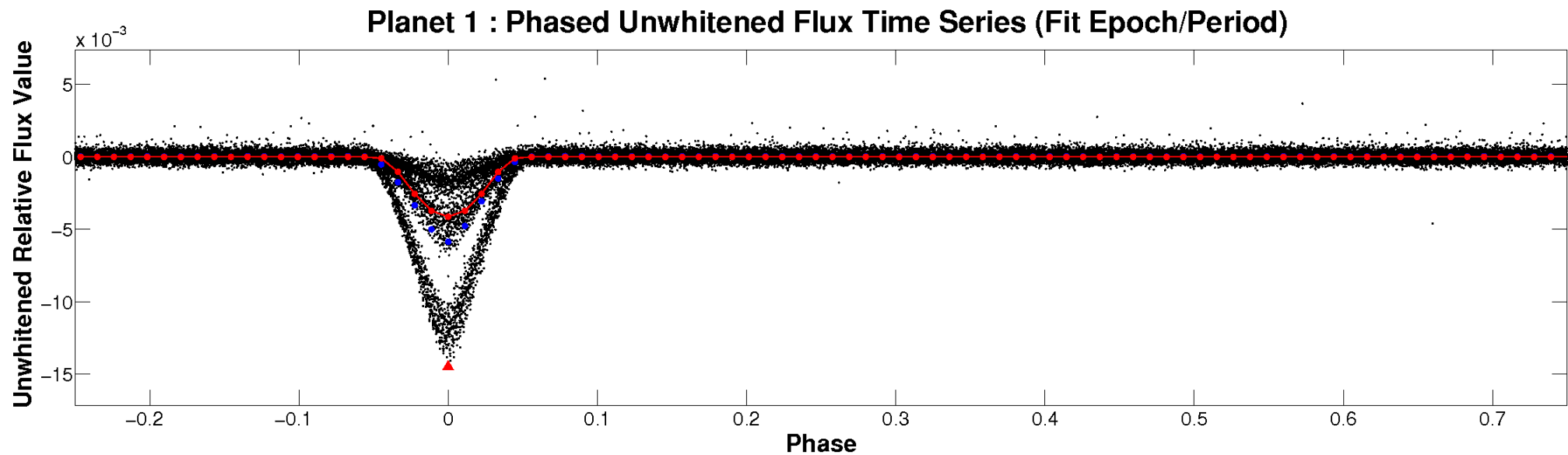


ALT Odd/Even

TCE 005023956-01

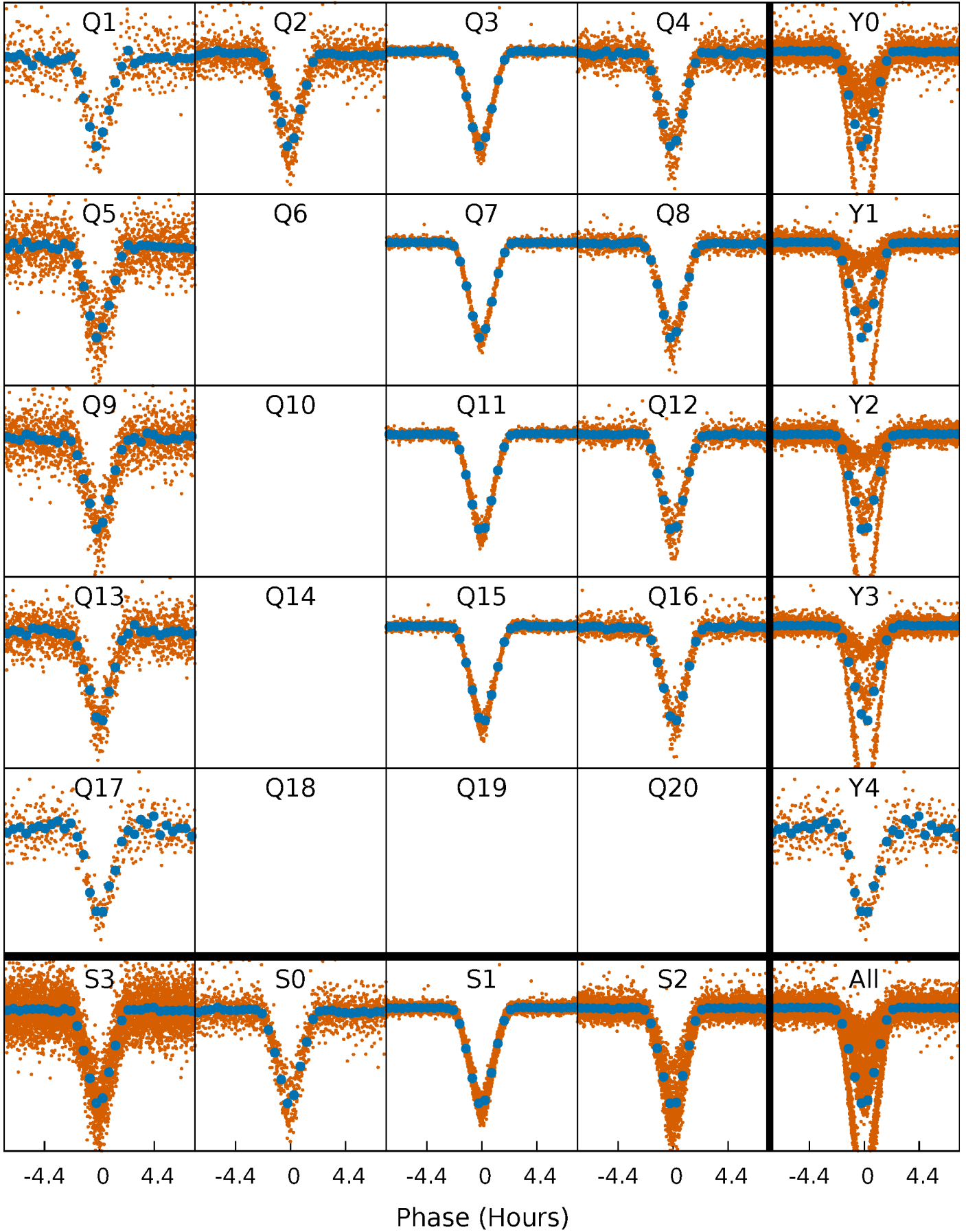


Non-Whitened Vs. Whitened Light Curve



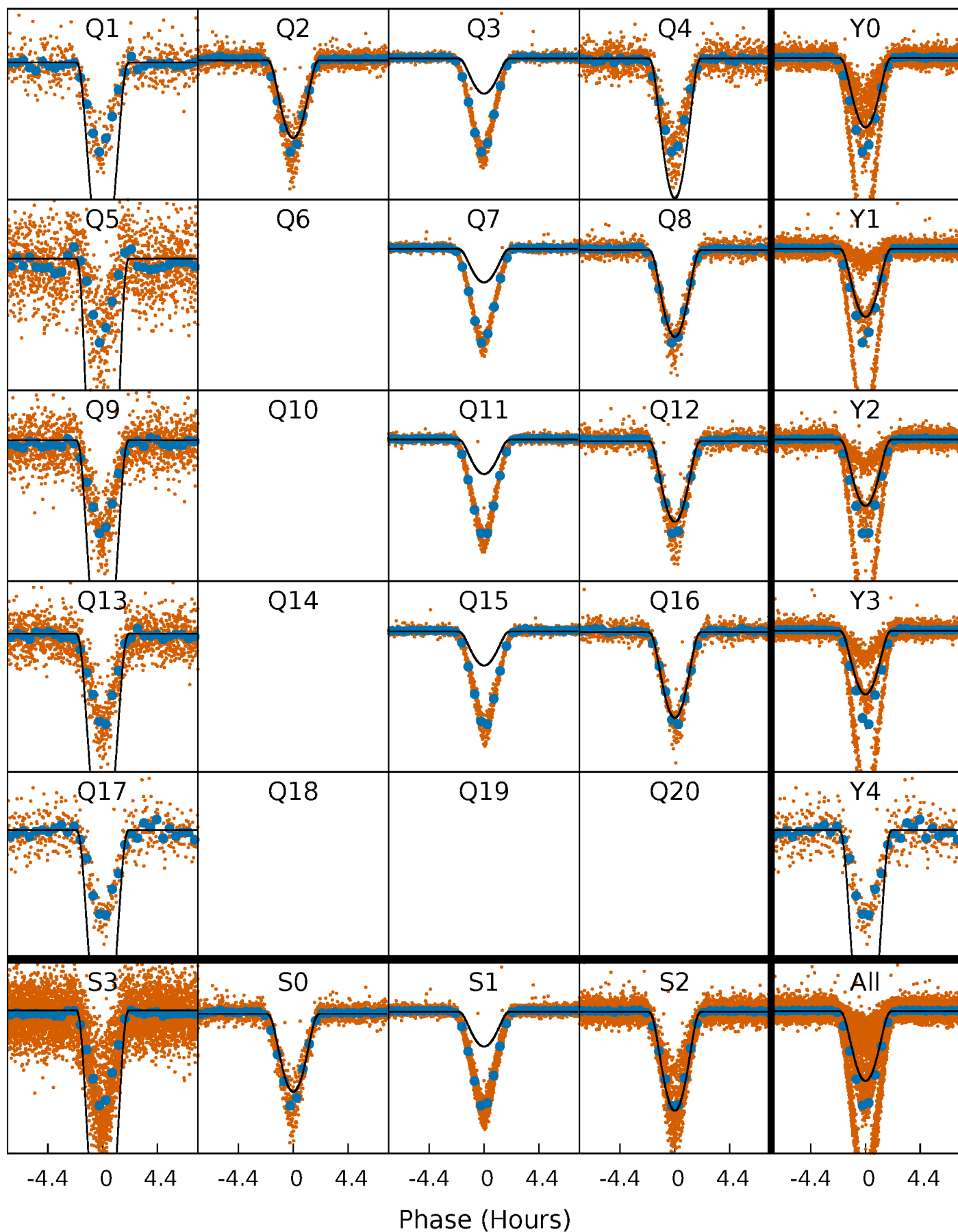
PDC Quarter-Phased Transit Curves

TCE 005023956-01 P= 1.824638 Days $T_0=132.891481$ (BKJD)



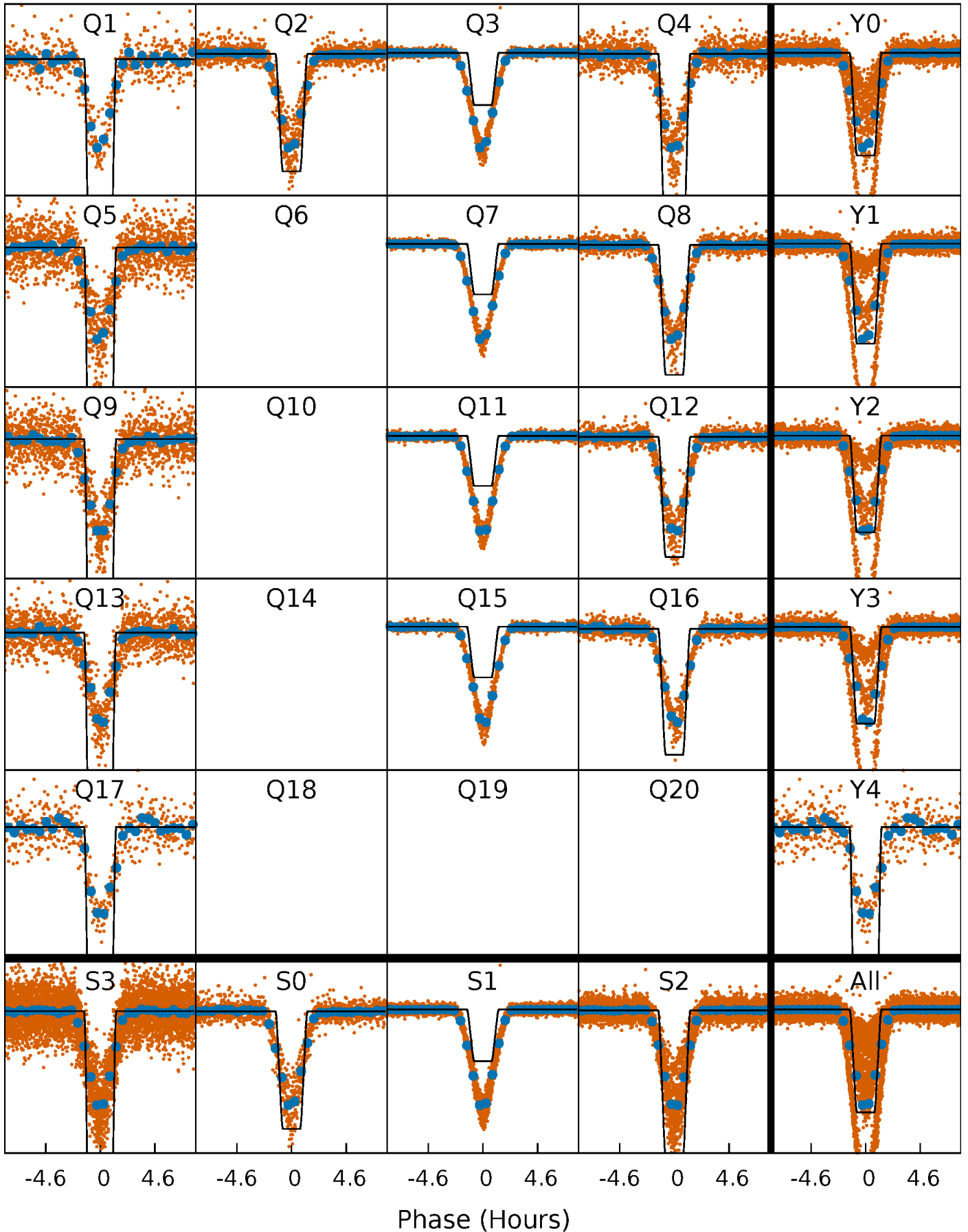
DV Quarter-Phased Transit Curves

TCE 005023956-01 P= 1.824638 Days $T_0=132.891481$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

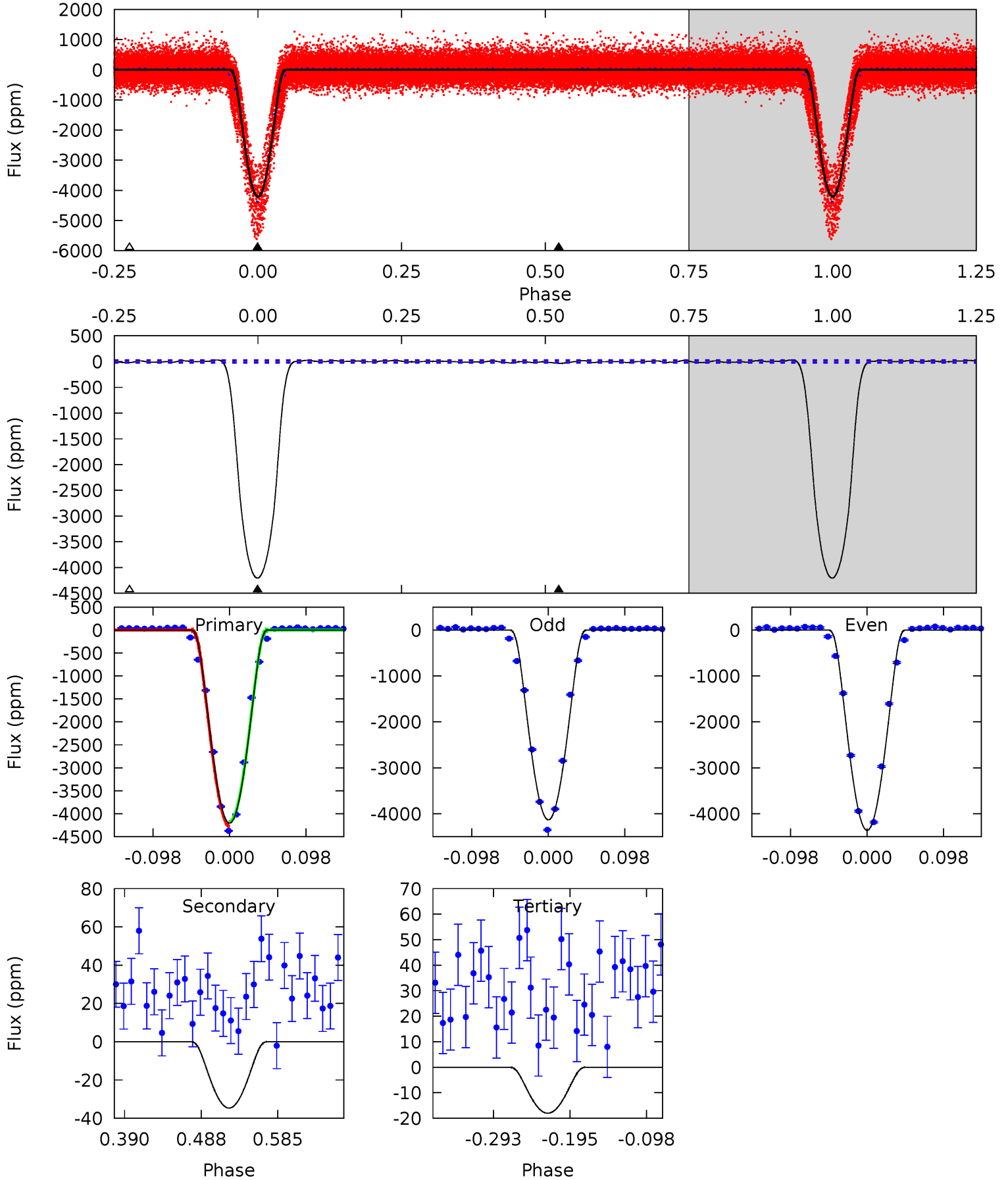
TCE 005023956-01 P= 1.824641 Days $T_0=132.888729$ (BKJD)



DV Model-Shift Uniqueness Test

005023956-01, P = 1.824638 Days, E = 131.066843 Days

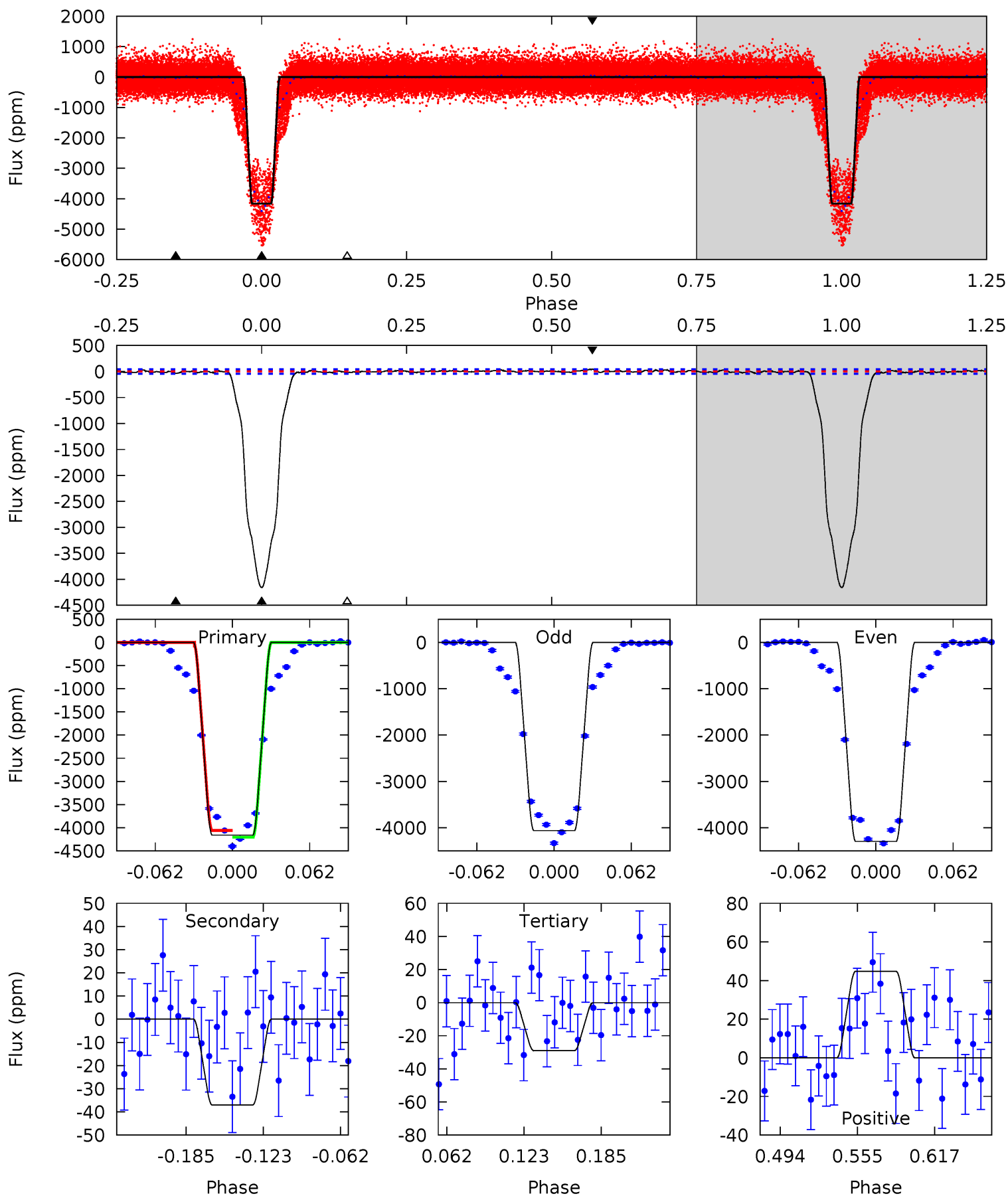
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
755.7	6.23	3.24	0	4.57	1.66	1.72	752.5	755.7	2.99	6.23	20.5	1.31	0.01	0



Alt Model-Shift Uniqueness Test

005023956-01, P = 1.824641 Days, E = 131.064088 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
451.3	4.01	3.15	4.86	4.67	1.87	1.44	448.2	446.5	0.87	-0.84	12.5	1.32	0.01	7.67



Stellar Parameters For KIC 005023956

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6190^{+203}_{-203}	$4.487^{+0.132}_{-0.108}$	$-1.940^{+0.300}_{-0.050}$	$0.793^{+0.104}_{-0.095}$	$0.704^{+0.065}_{-0.022}$	$1.988^{+1.131}_{-0.610}$
	+3%/-3%	+3%/-2%	+15%/-3%	+13%/-12%	+9%/-3%	+57%/-31%
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 005023956-01 / KOI 0233.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-35 ± 6	$9.27^{+1.33}_{-1.23}$	2095^{+108}_{-103}	-2344^{+146}_{-105}	$0.150^{+0.058}_{-0.039}$
Alt.	-37 ± 9	$6.77^{+1.30}_{-1.22}$	2106^{+112}_{-103}	1543^{+854}_{-3823}	$0.302^{+0.186}_{-0.106}$

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 $A_{obs} \gg 1.0$

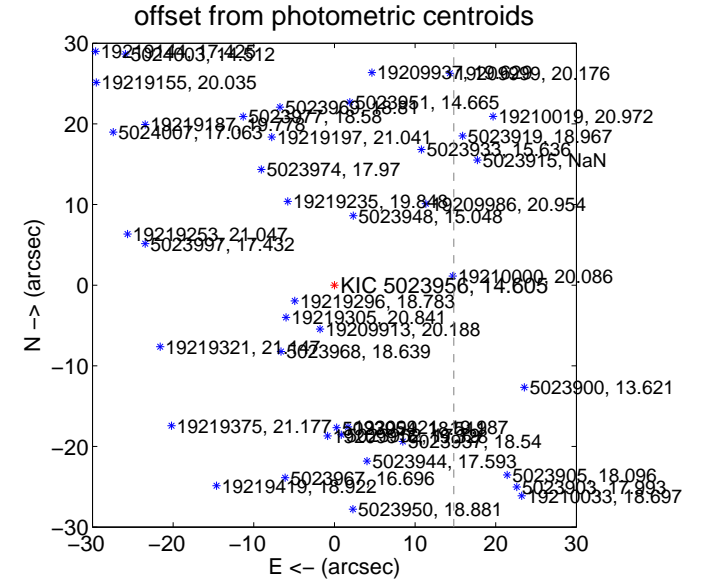
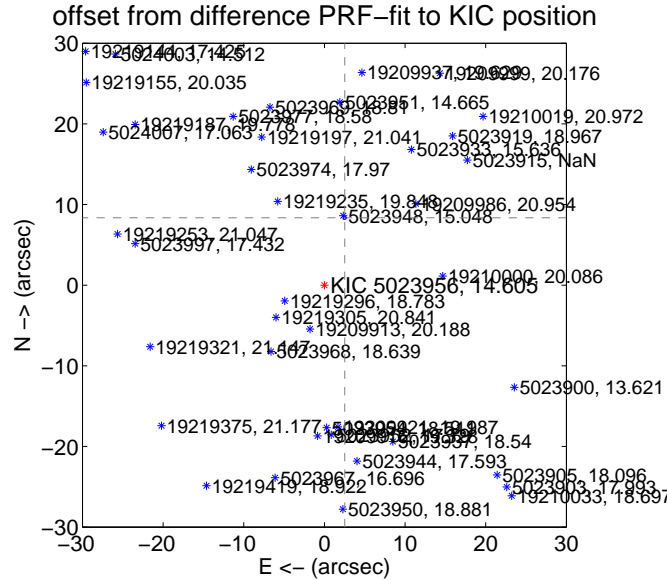
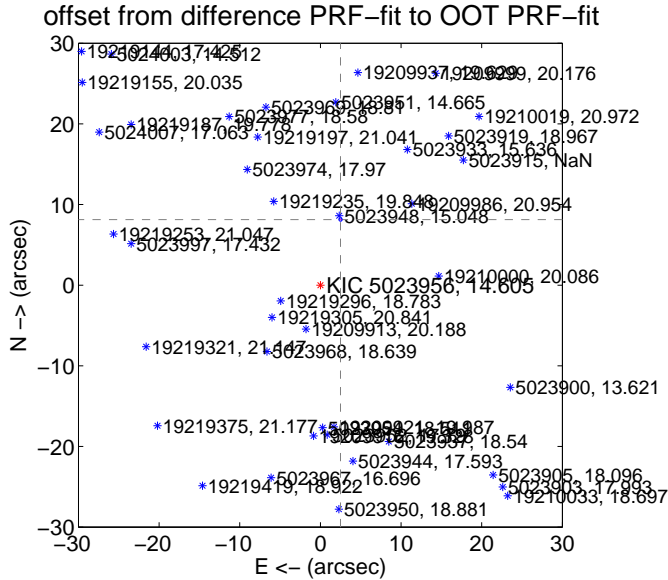
DV Centroid Data

Supplemental centroid analysis for 005023956-01. Kepler magnitude: 14.61. Transit SNR 291.80

There are 1 quarters with good PRF difference image offsets

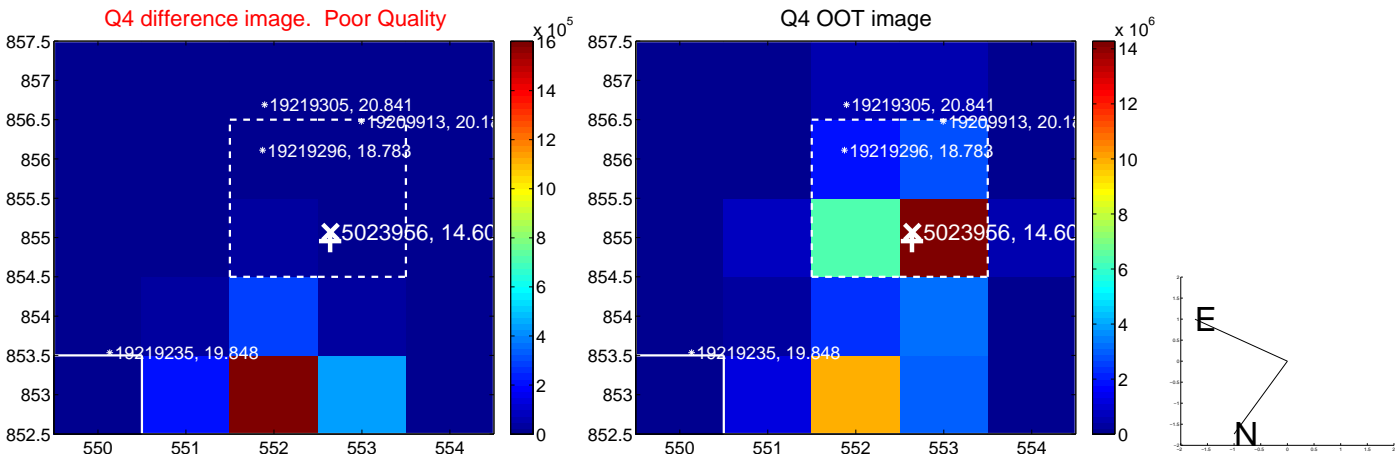
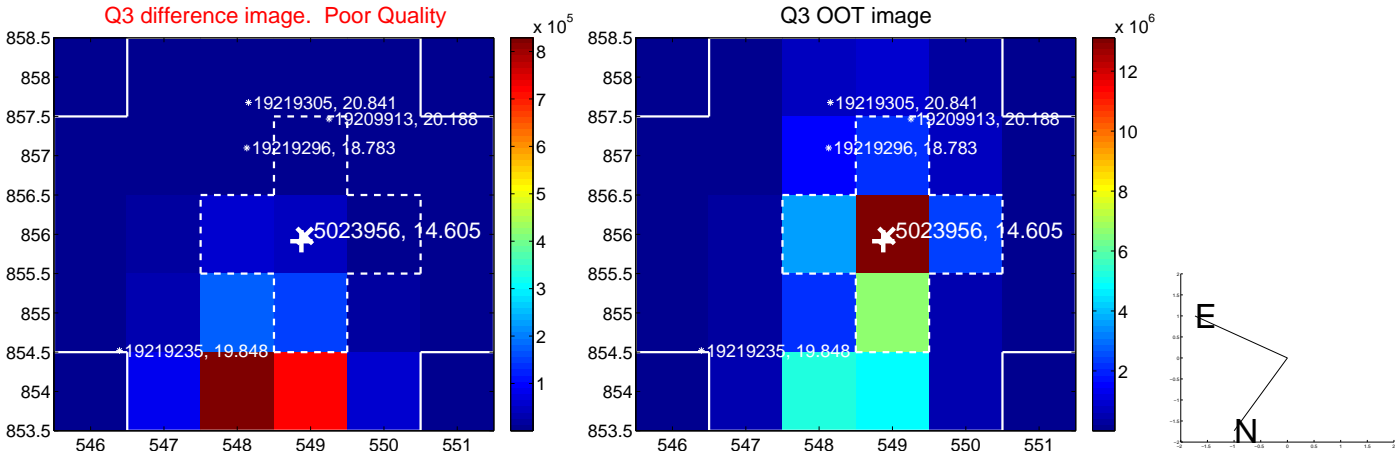
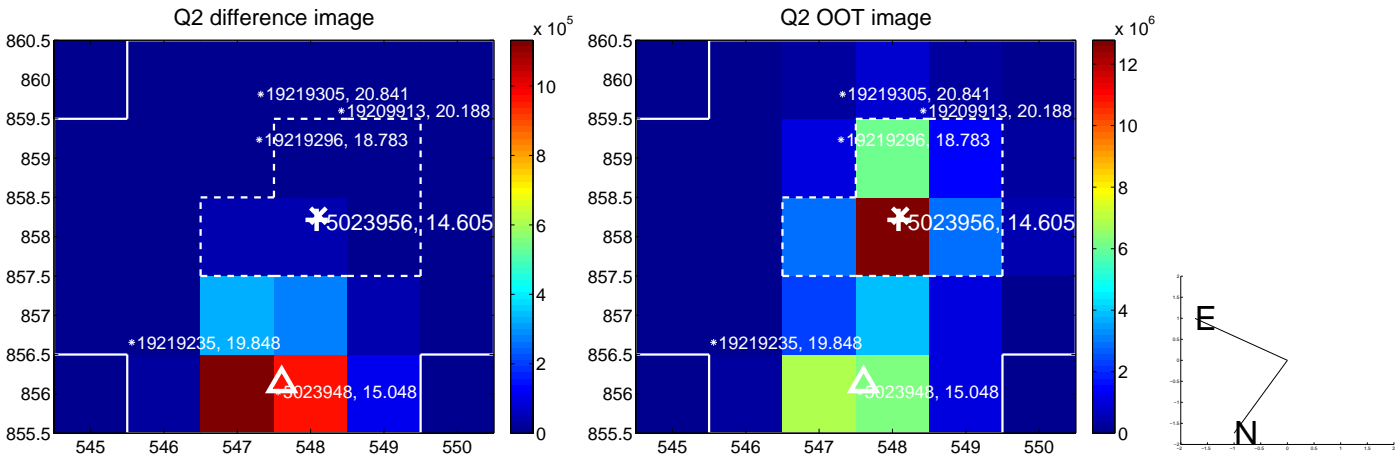
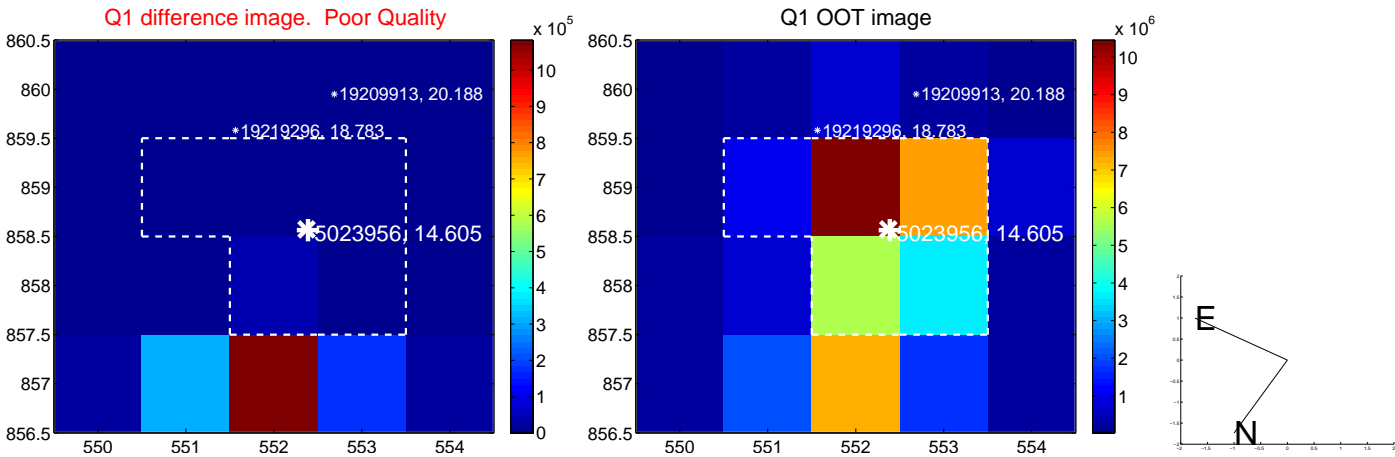
The direct PRF centroid is offset from the target star catalog position by about 0.23 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	8.504 \pm 0.067	127.50	-2.496 \pm 0.067	8.130 \pm 0.067
PRF-fit source offset from KIC position	8.729 \pm 0.067	130.86	-2.515 \pm 0.067	8.359 \pm 0.067
photometric centroid source offset	58.50 \pm 0.03	2110.80	-14.80 \pm 0.02	56.60 \pm 0.03

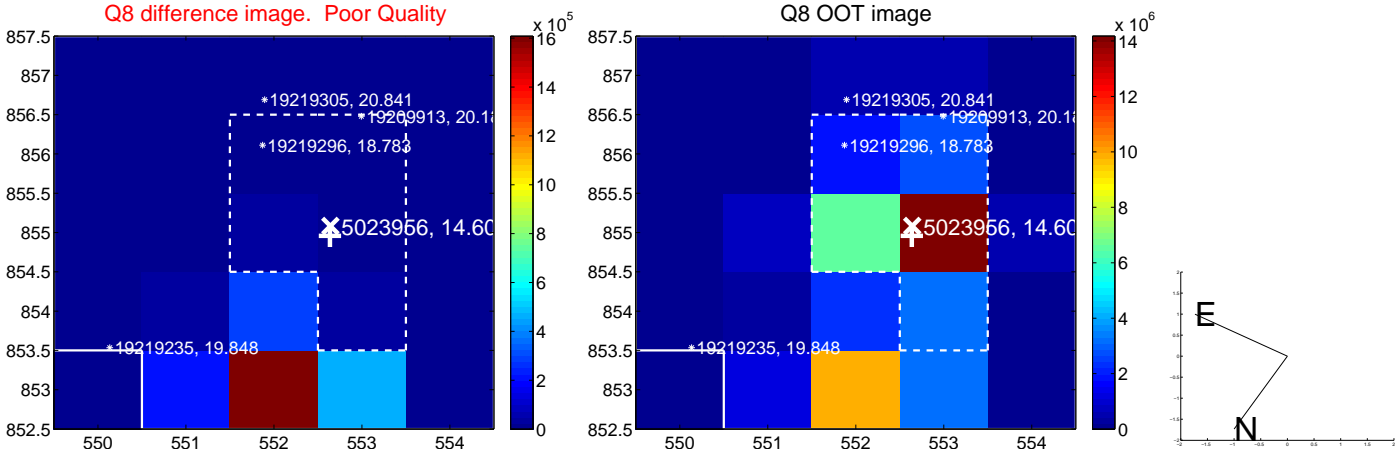
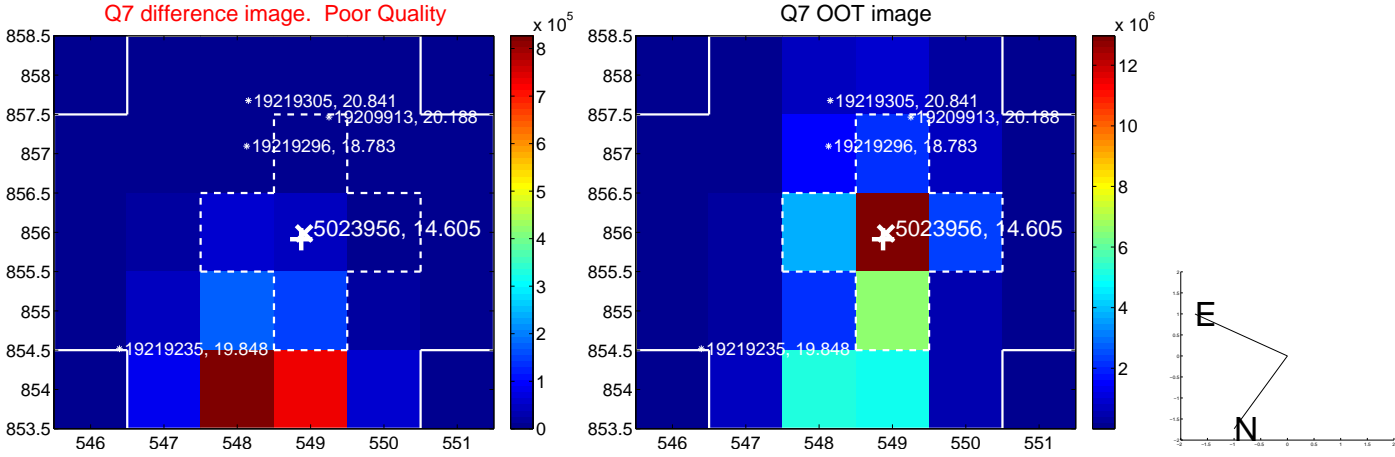
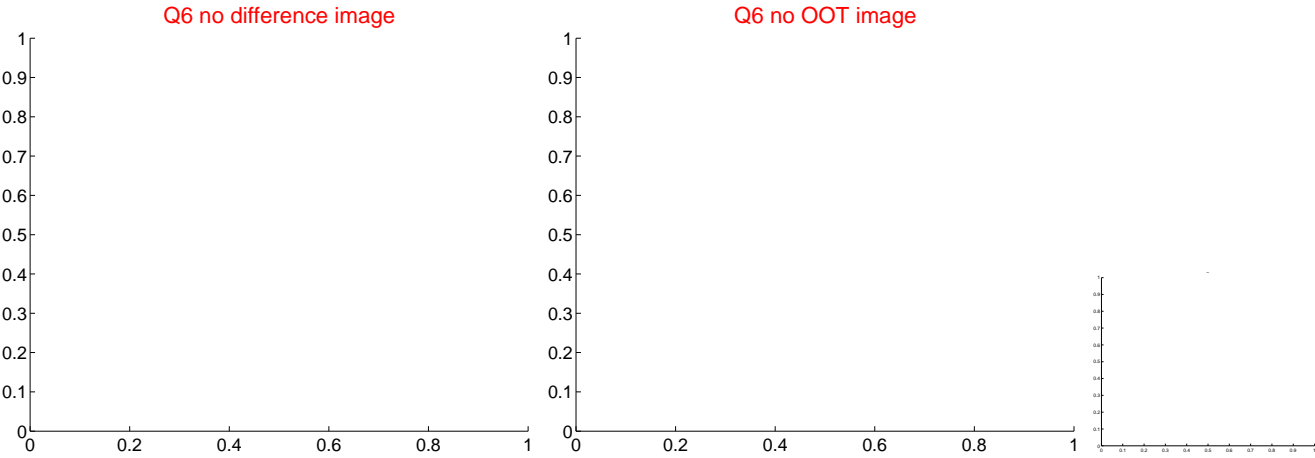
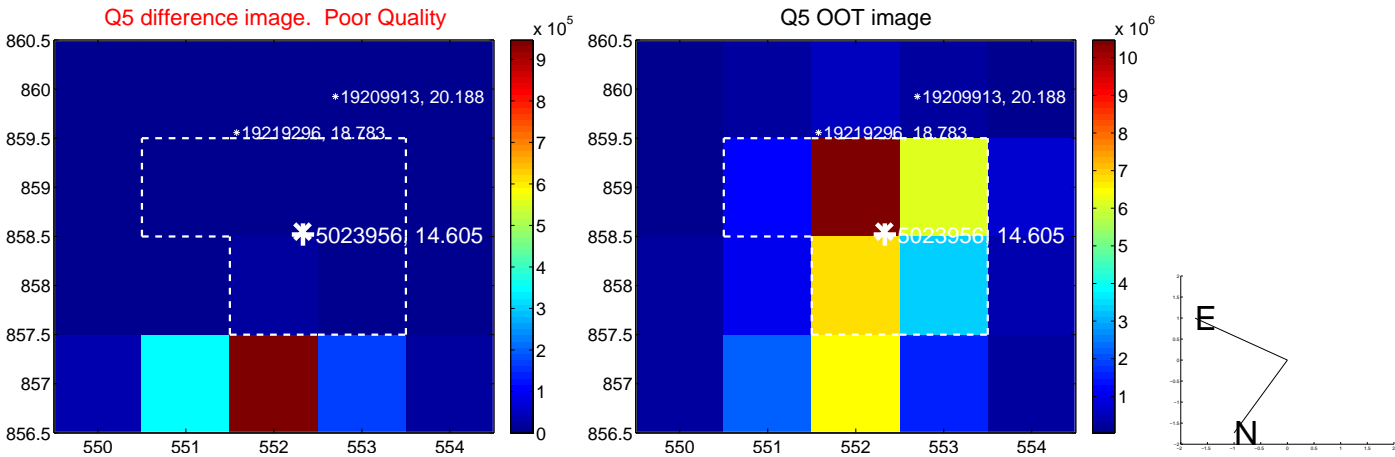


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

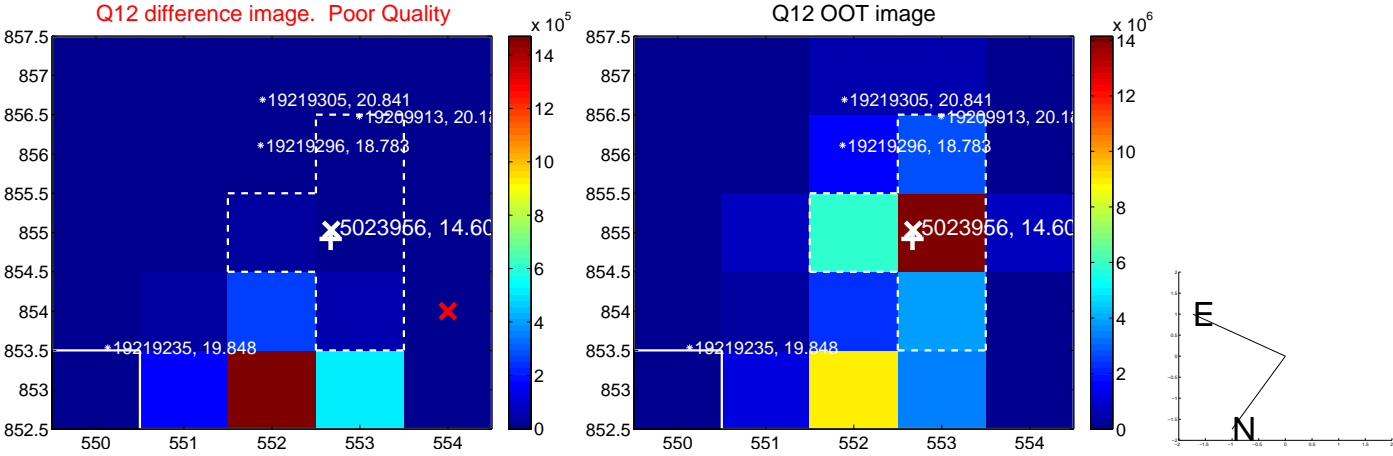
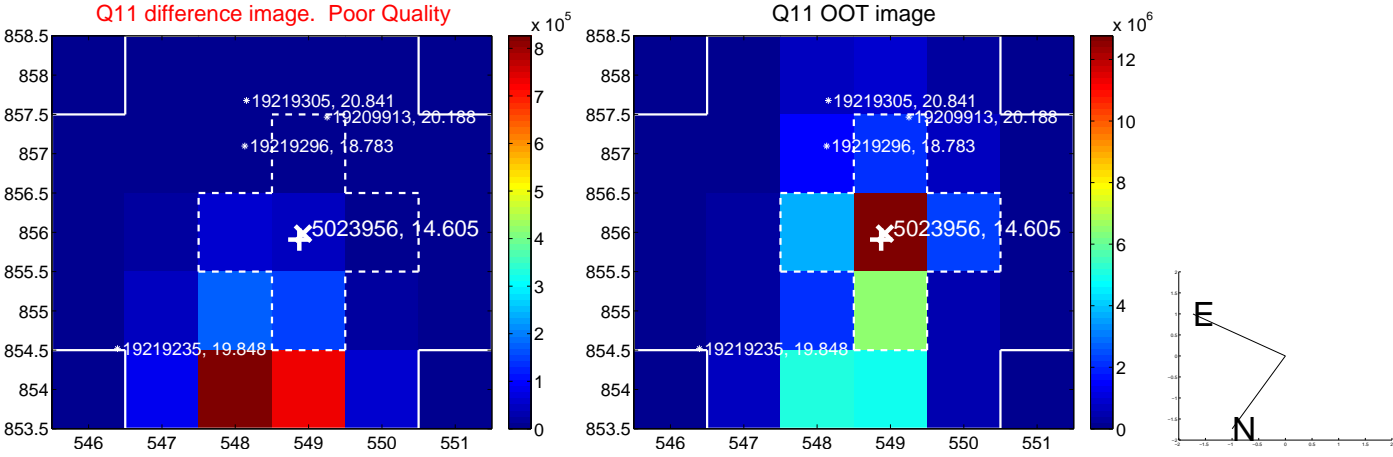
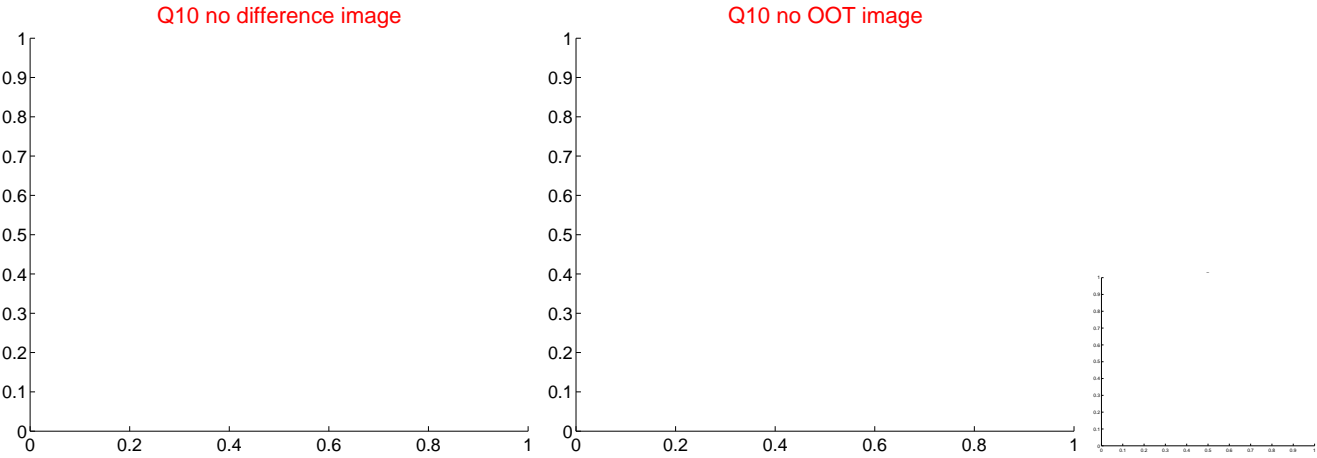
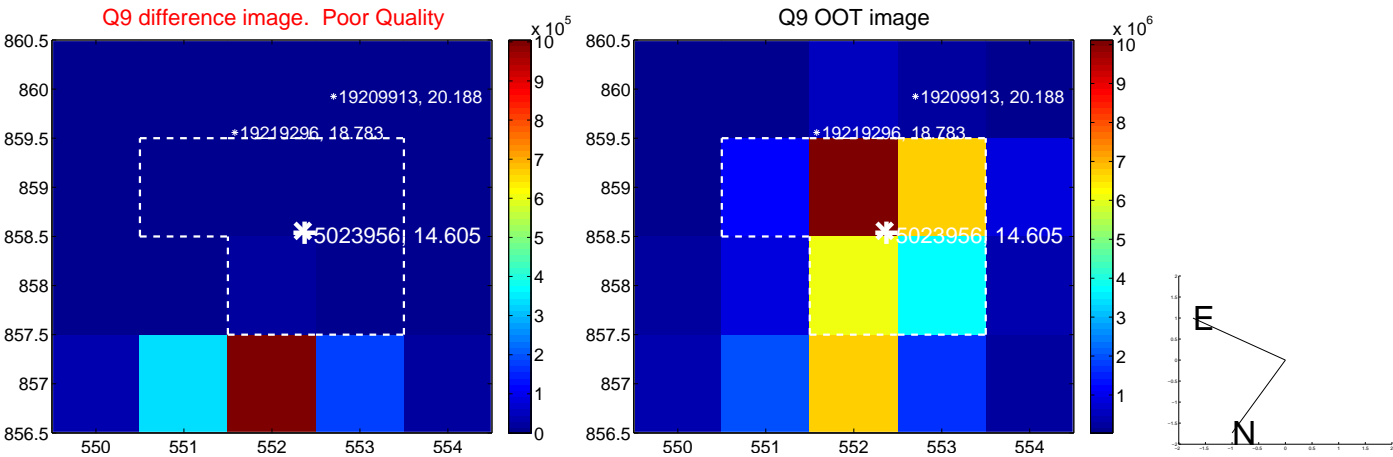
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



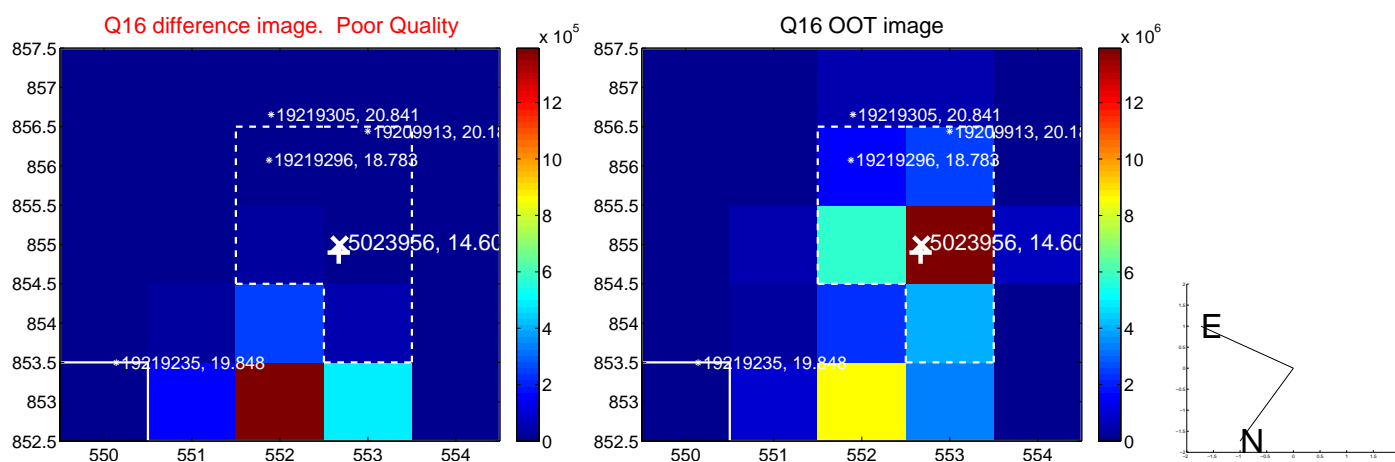
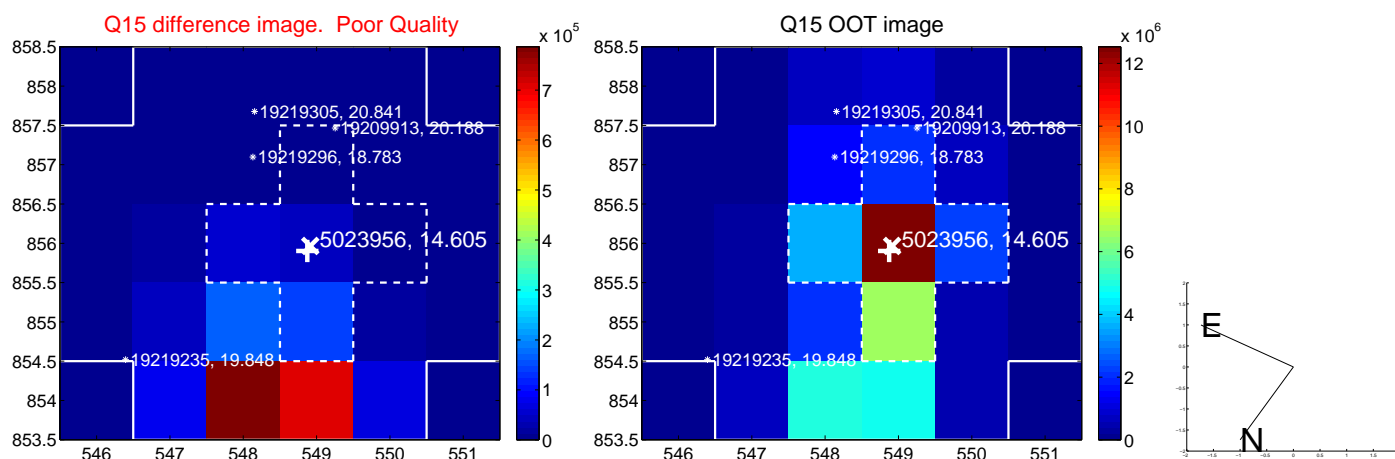
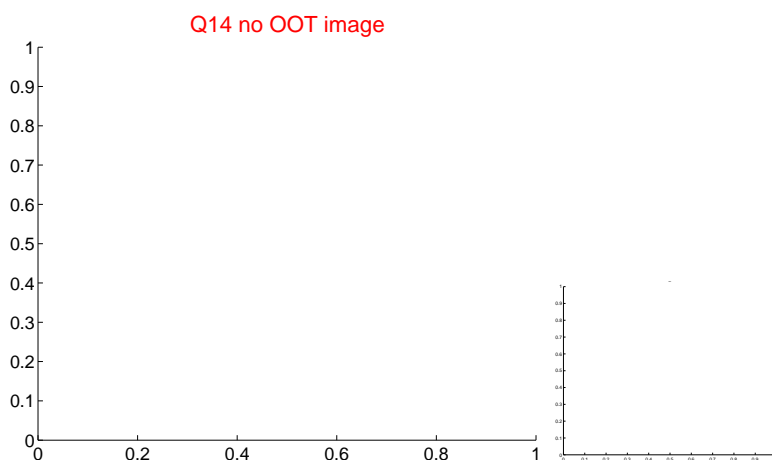
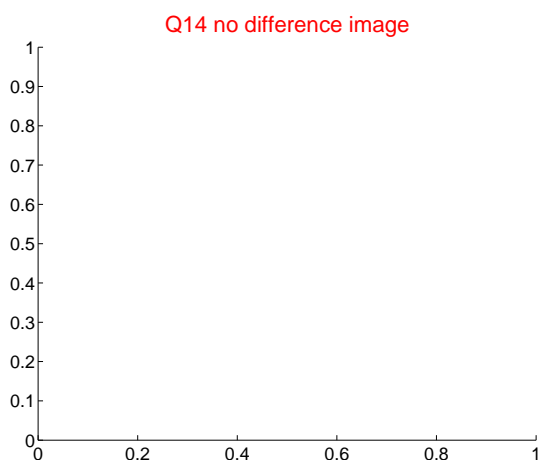
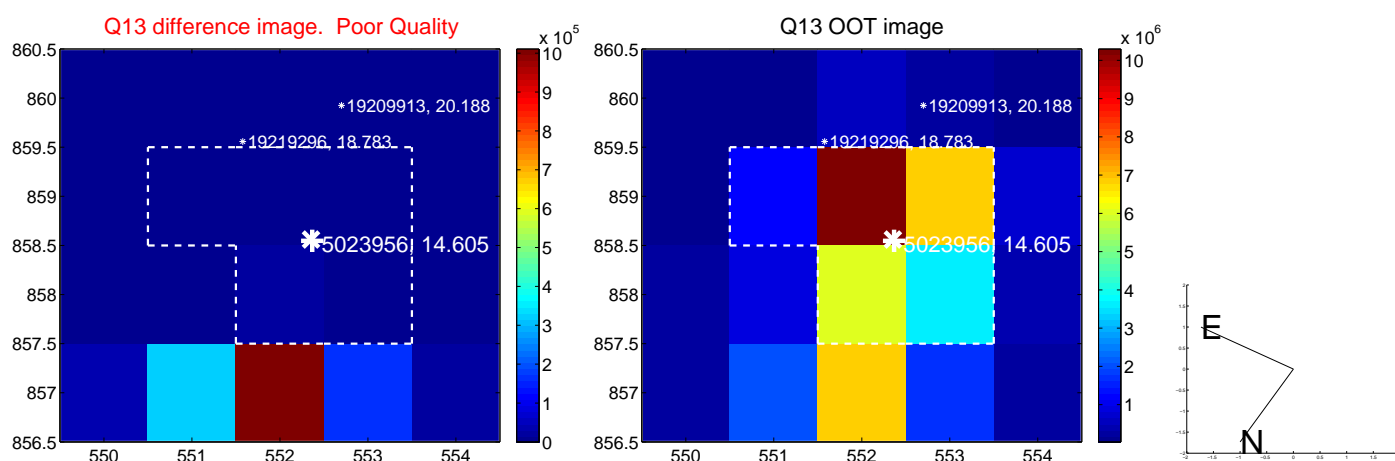
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



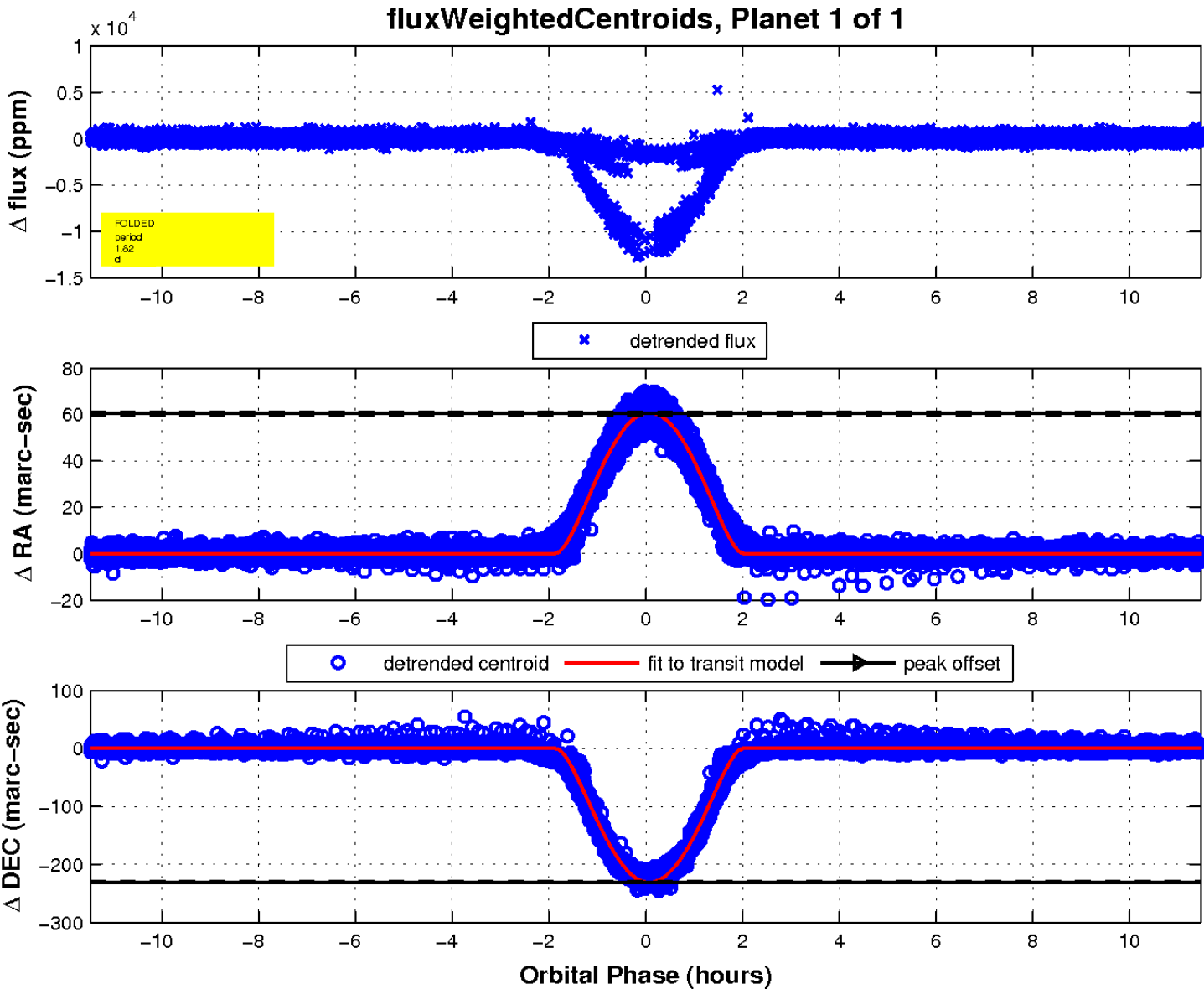
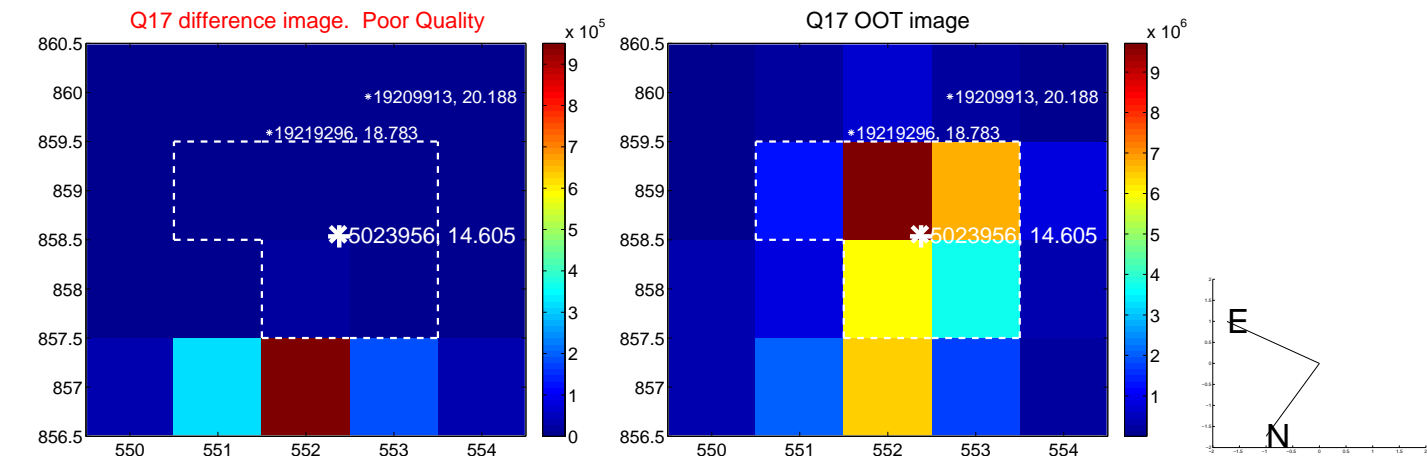
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



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

