

KIC 008256049

Q1-17 DR25 TCE Parameters

TCE	Run Type	KOI?	Period (Days)	Epoch (BKJD)	Depth (ppm)	Duration (Hours)	MES	SNR	R _★ (R _☉)	T _★ (K)	R _p (R _⊕)	S _p (S _⊕)
008256049-01	OBS	0909.01	16.371926	140.017359	2837.9	2.991	165.2	55.5	0.59	4187	3.27	8.72

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008256049-01	OBS	FP	0.00	0	0	1	1	SEASONAL_DEPTH_DV—SEASONAL_DEPTH_ALT—CENT_RESOLVED_OFFSET—HALO_GHOST—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 008256049-01

TCE (1)	KIC	Parent (2)	Parent KIC	P ₁ :P ₂	Dist (″)	ΔRow	ΔCol	m ₂	m ₁	D ₂ /D ₁	Mechanism	Flag	σ _P	σ _T
008256049-01	8256049	3652.01	8256044	1:1	7.9	2	-1	15.88	15.66	25.86	Direct-PRF	0	0.07	0.06

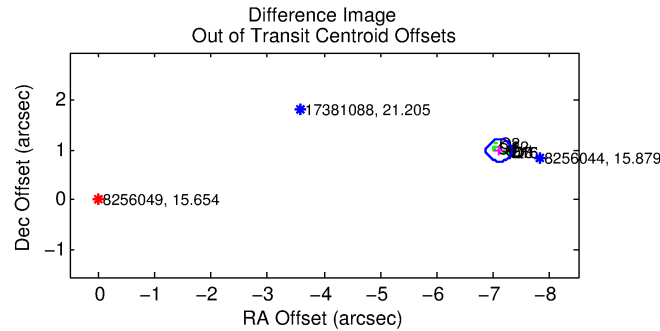
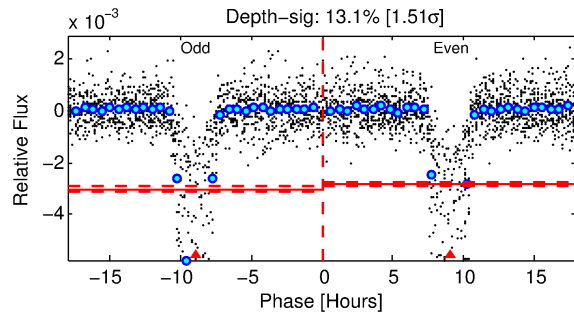
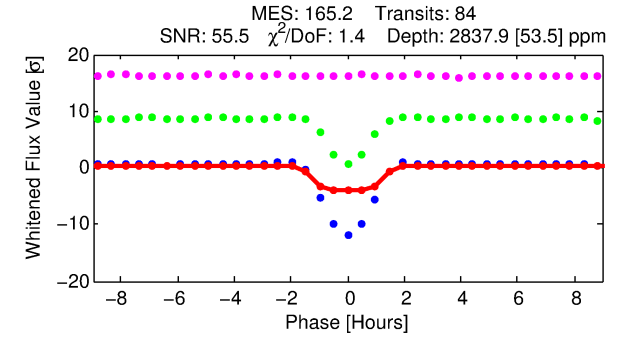
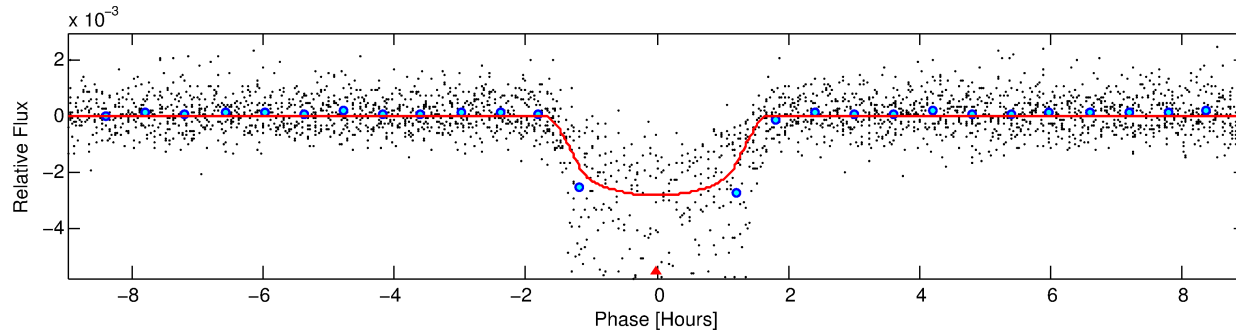
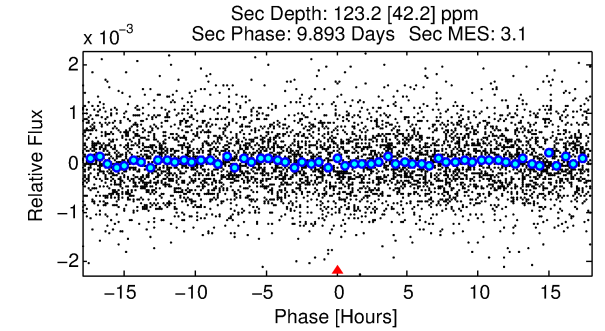
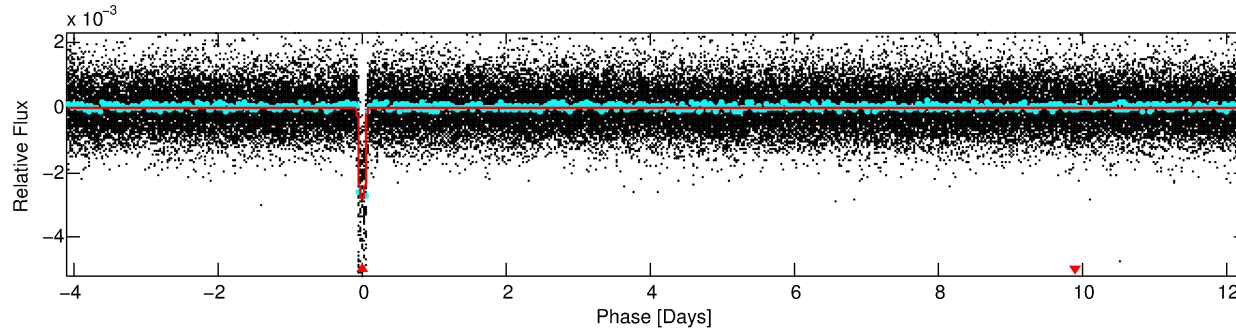
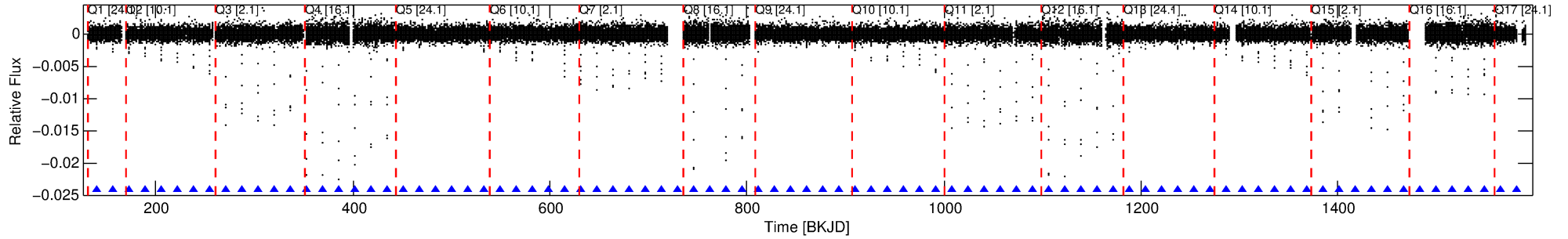
Notes: P₁:P₂ is the period ratio. Dist is the distance in arcseconds. ΔRow and ΔCol are the number of pixels apart in row and column. m₂ and m₁ are the magnitudes of the parent and child. D₂/D₁ is the parent's transit depth divided by the child's. σ_P and σ_T are the significance of the match in period and epoch. For a match to be considered significant σ_P < 5.0 and σ_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: 8256049 Candidate: 1 of 1 Period: 16.372 d

KOI: K00909.01 Corr: 0.922

Kp: 15.65 R*: 0.59 Rs Teff: 4187.0 K Logg: 4.66 Fe/H: -0.280



DV Fit Results:

Period = 16.37193 [0.00002] d
Epoch = 140.0174 [0.0012] BKJD
Rp/R* = 0.0507 [0.0092]
a/R* = 35.89 [22.83]
b = 0.61 [0.68]
Seff = 8.72 [1.43]
Teq = 438 [18] K
Rp = 3.27 [0.69] Re
a = 0.1052 [0.0088] AU
Ag = 70.03 [35.78] [1.93σ]
Teffp = 1960 [251] K [6.04σ]

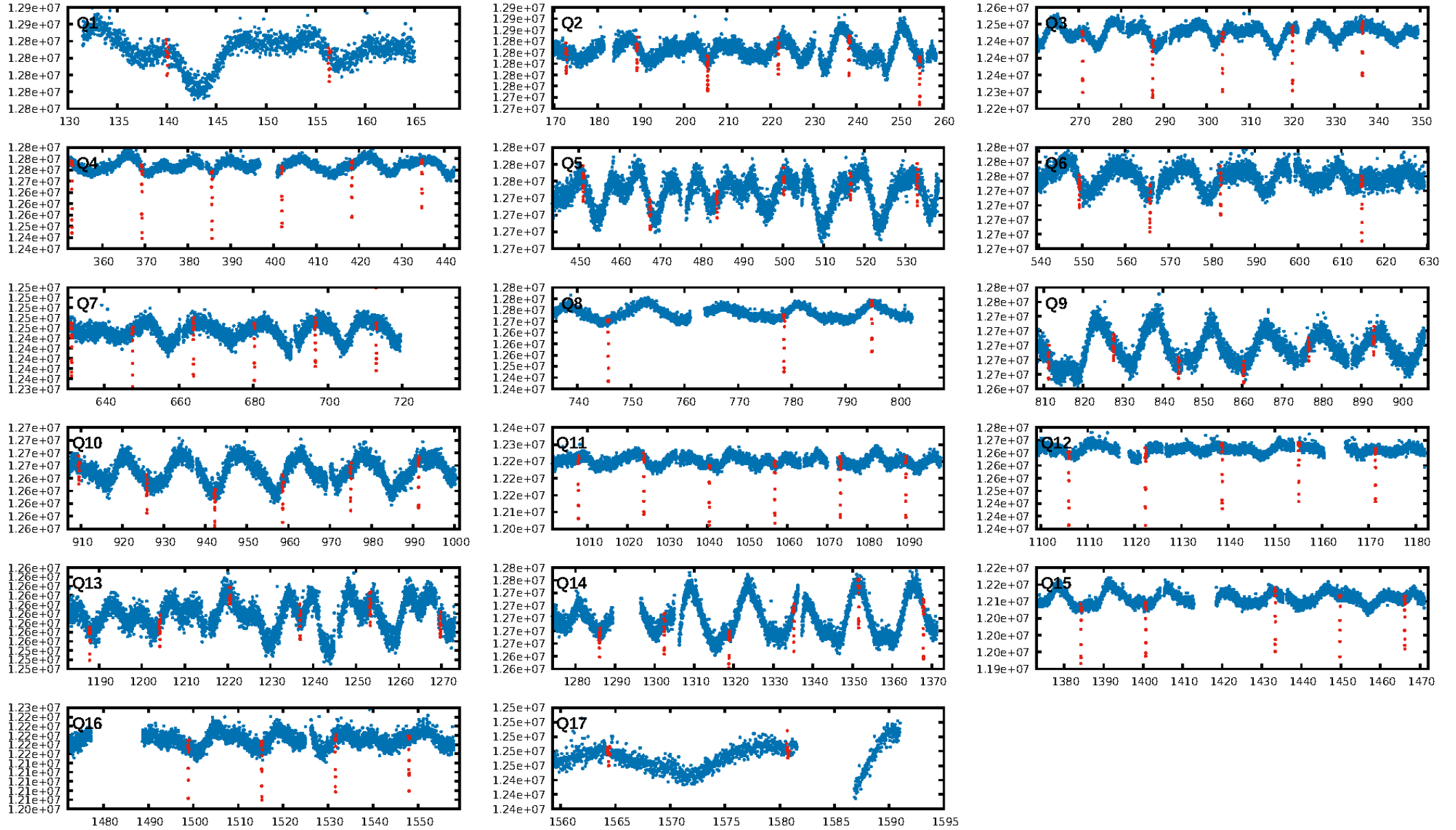
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 45.9%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [80/80]
GhostDiagnostic-chr: -0.1947
Centroid-sig: 0.0%
Centroid-so: 30.498 arcsec [186.77σ]
OotOffset-rm: 7.168 arcsec [96.48σ]
KicOffset-rm: 7.884 arcsec [110.68σ]
OotOffset-st: 1/4/4/0 [9]
KicOffset-st: 1/4/4/0 [9]
DiffImageQuality-fgm: 1.00 [9/9]
DiffImageOverlap-fno: 1.00 [17/17]

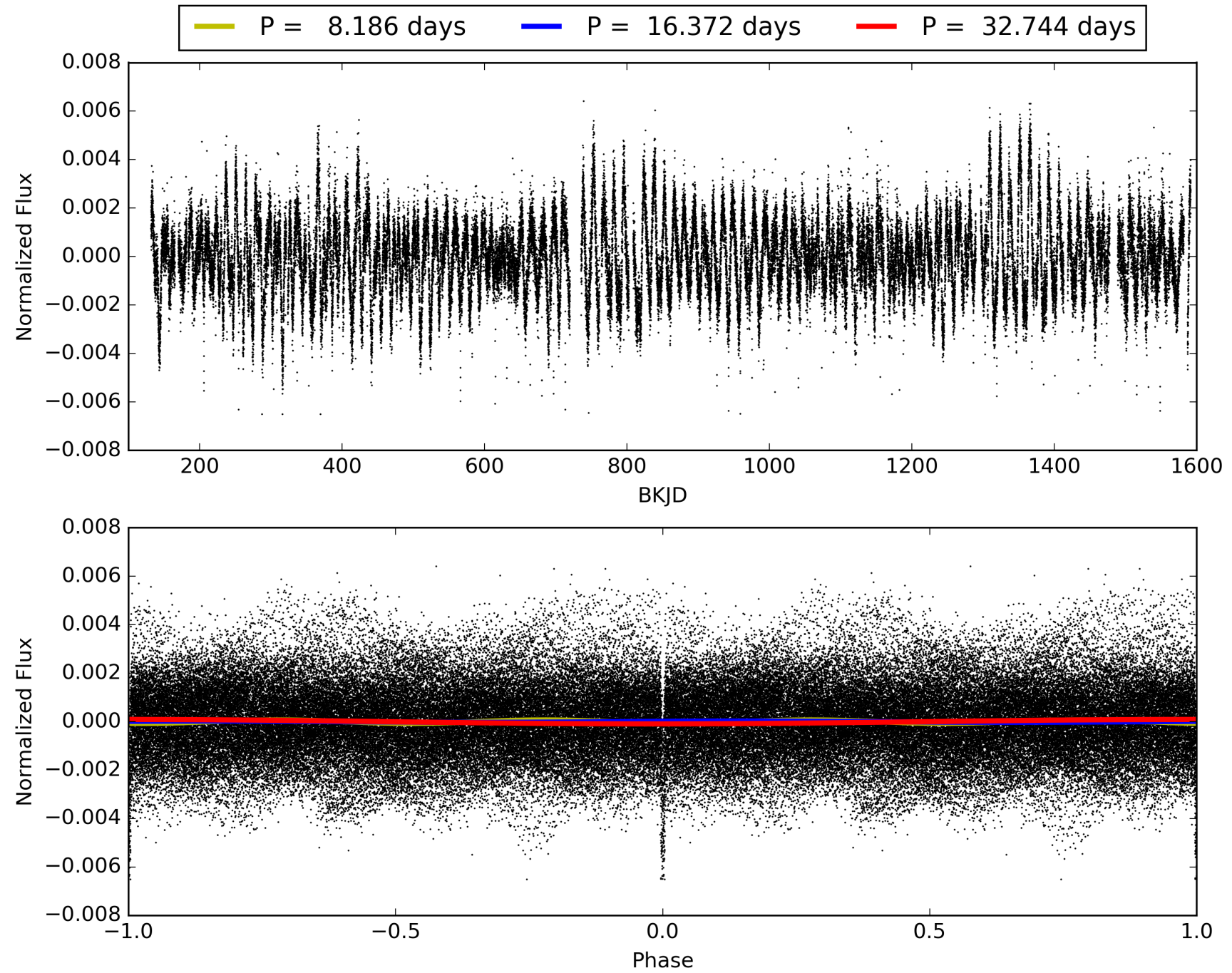
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 19:04:18 Z

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

TCE 008256049-01, PDC Light Curves

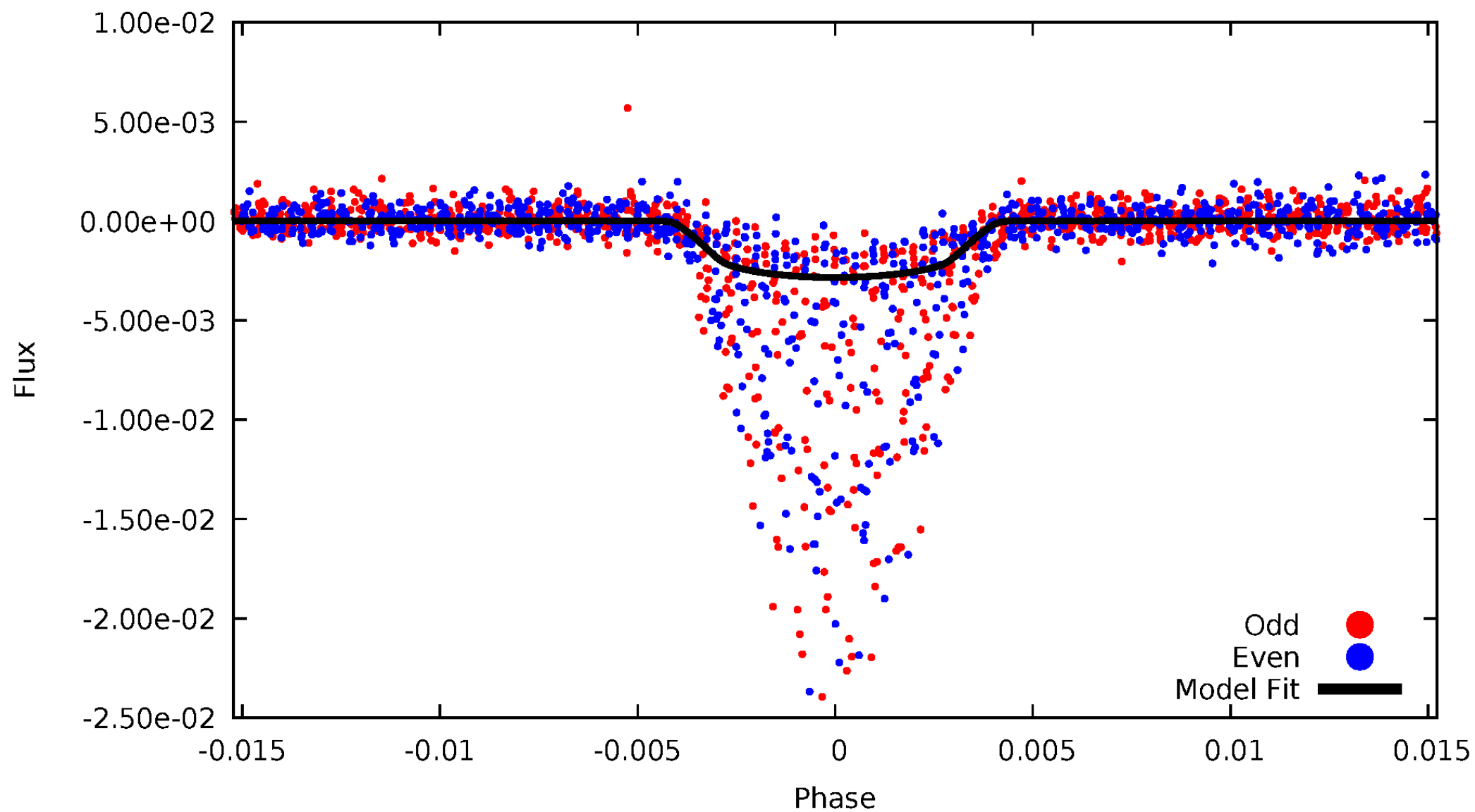


TCE 008256049-01



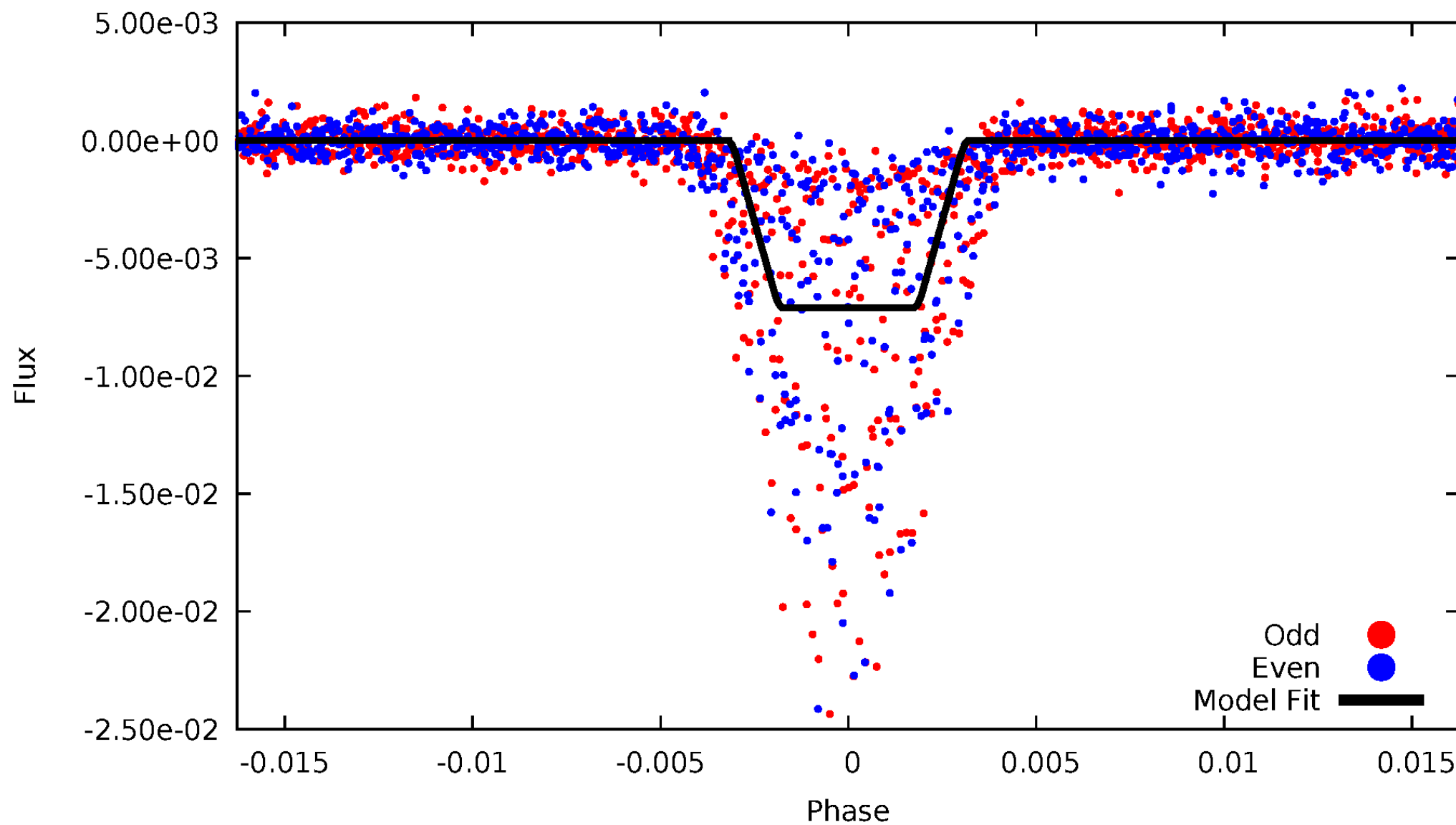
DV Odd/Even

TCE 008256049-01



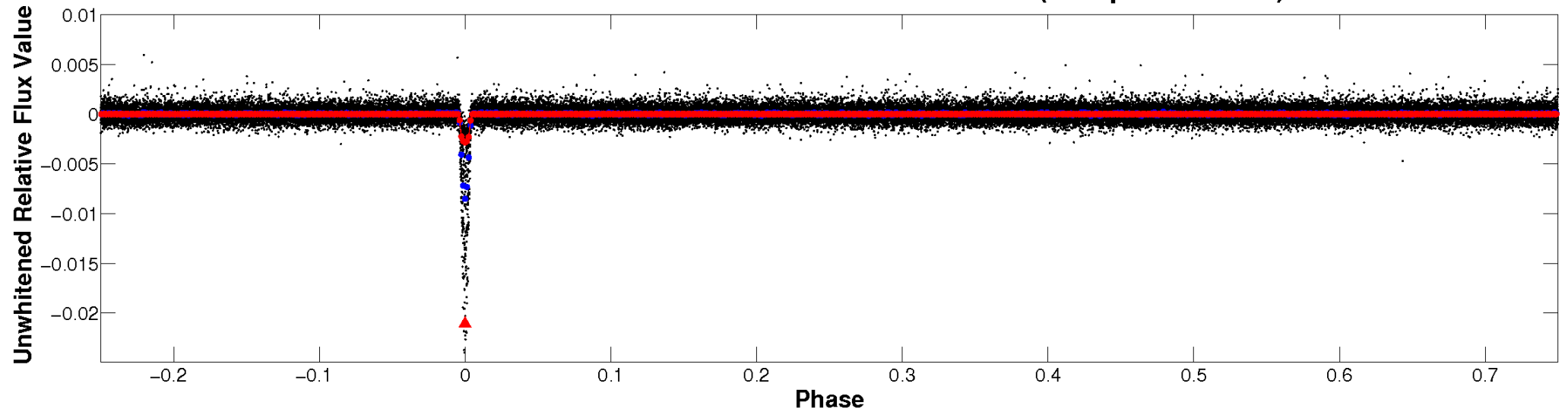
ALT Odd/Even

TCE 008256049-01

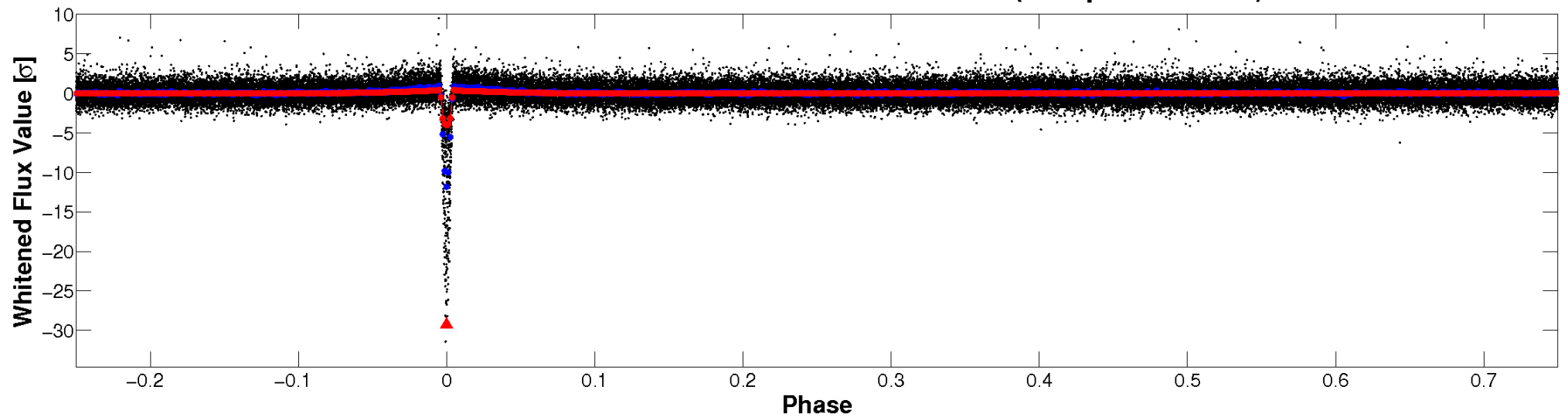


Non-Whitened Vs. Whitened Light Curve

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

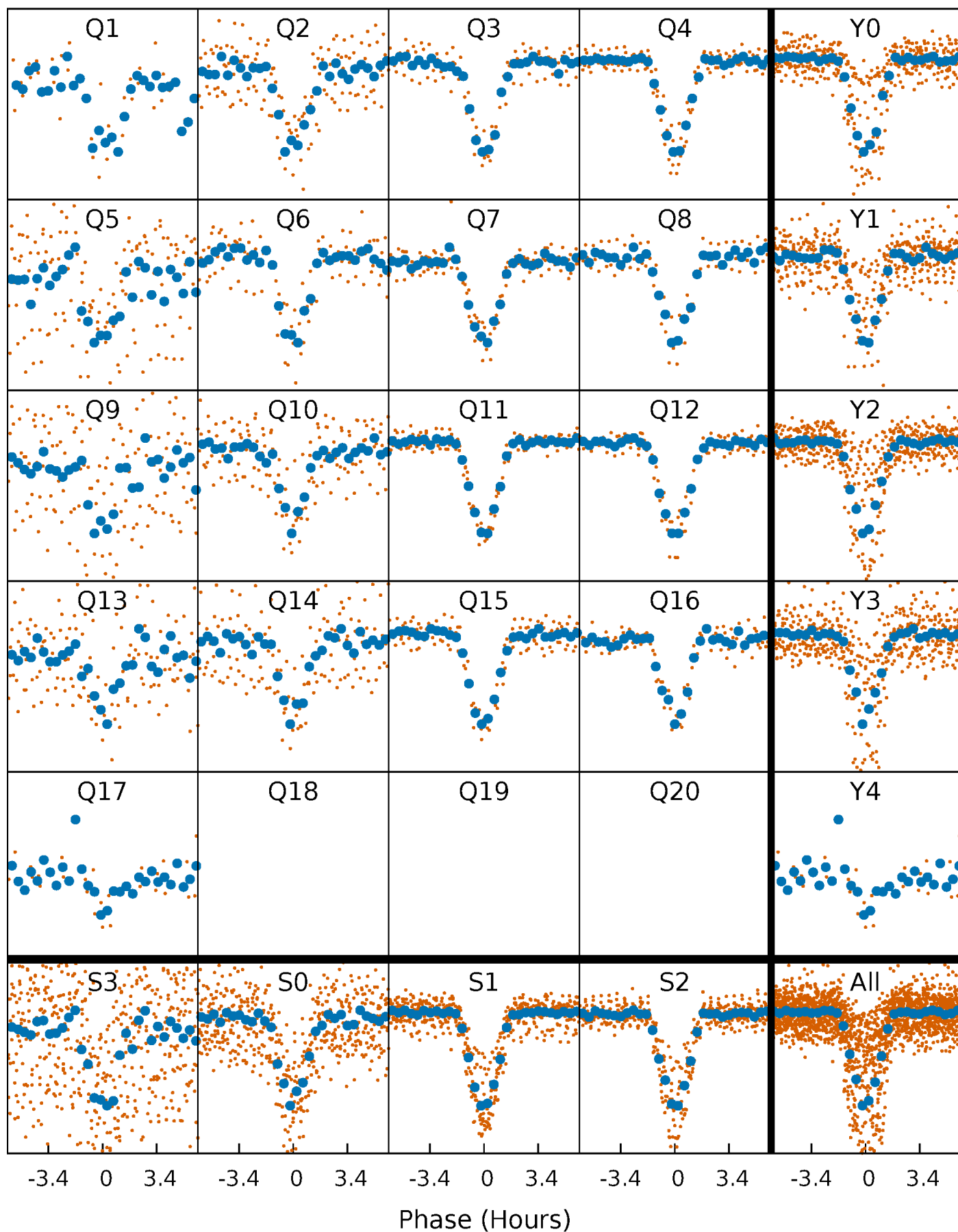


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



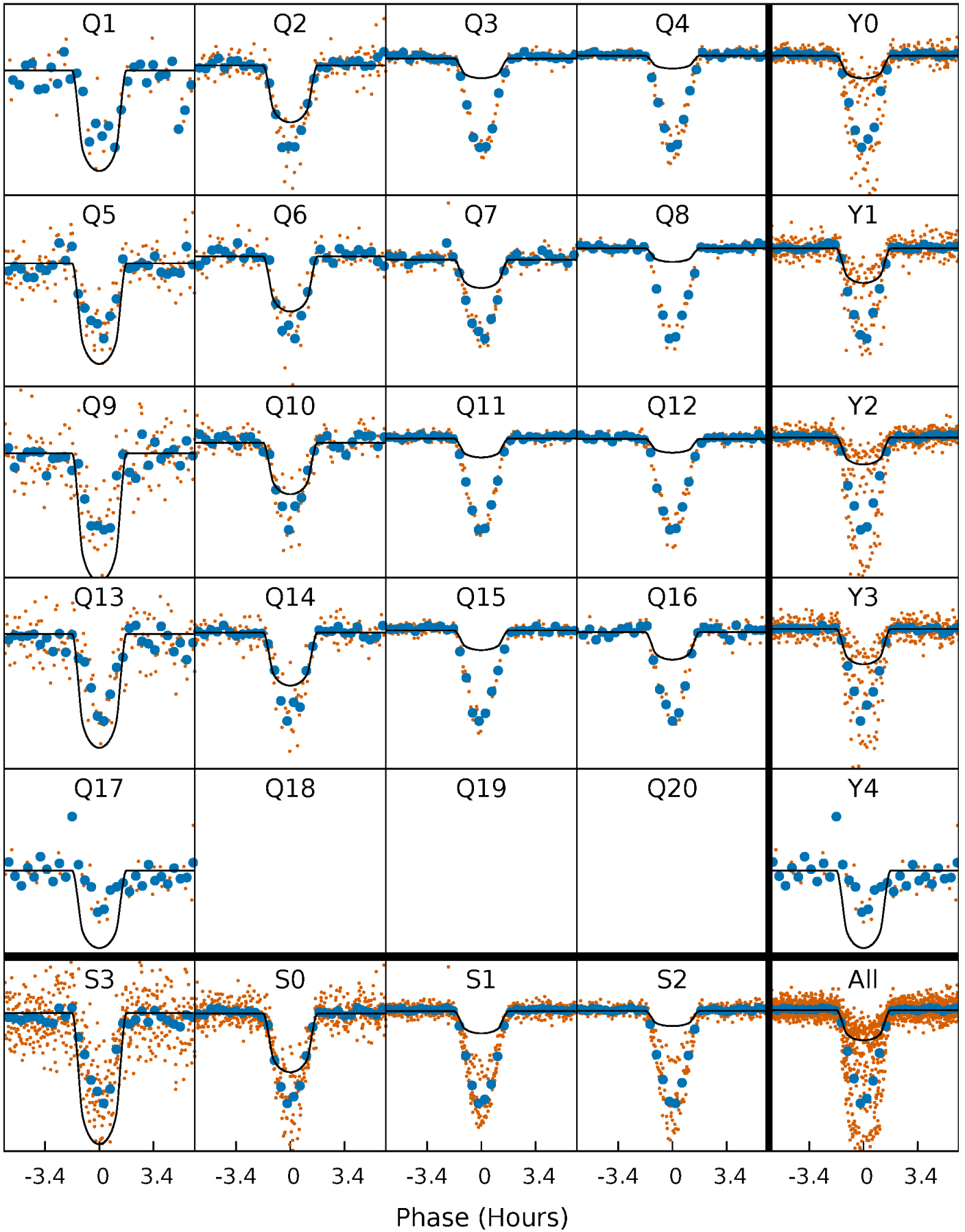
PDC Quarter-Phased Transit Curves

TCE 008256049-01 P= 16.371926 Days $T_0=140.017359$ (BKJD)



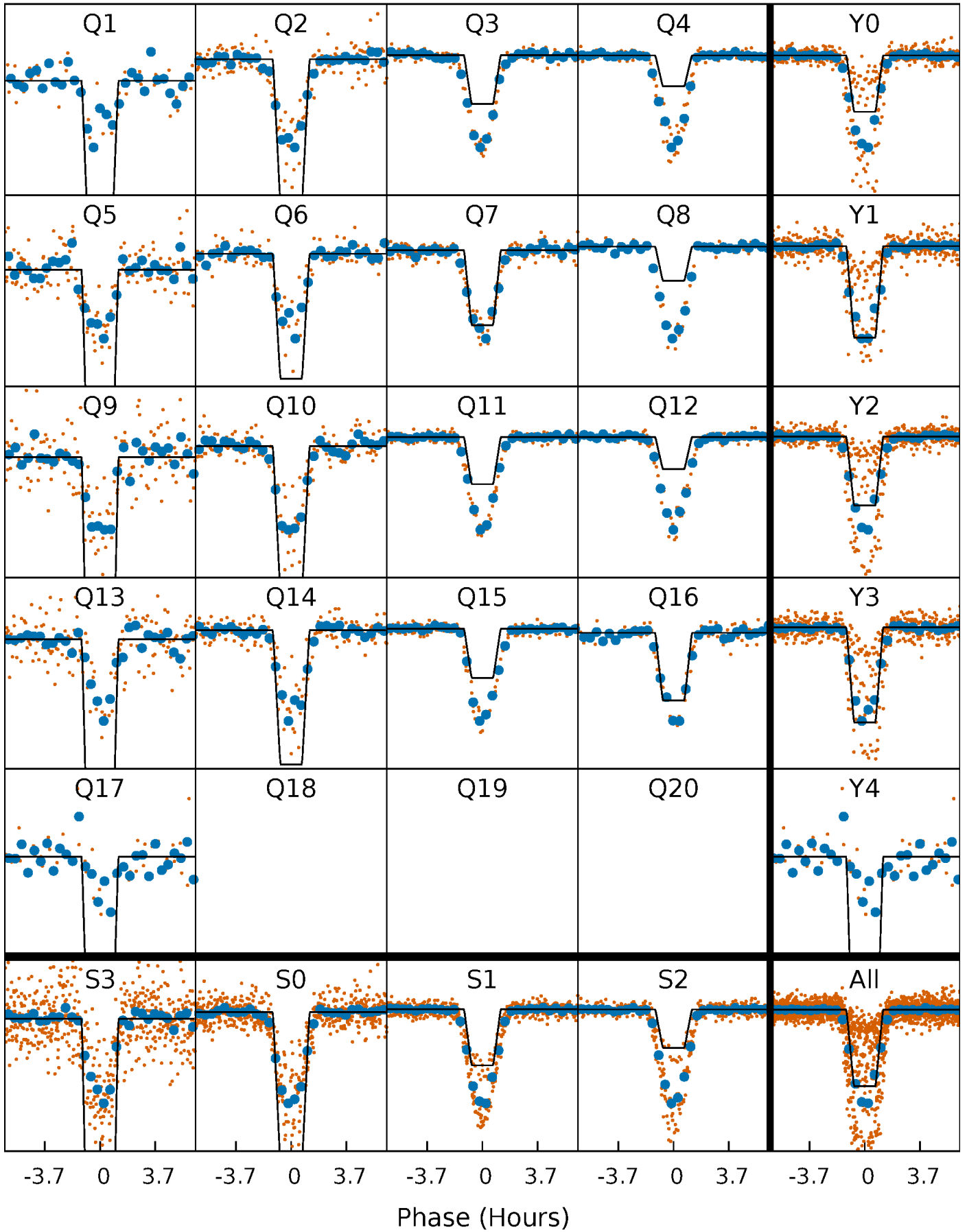
DV Quarter-Phased Transit Curves

TCE 008256049-01 P= 16.371926 Days $T_0=140.017359$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

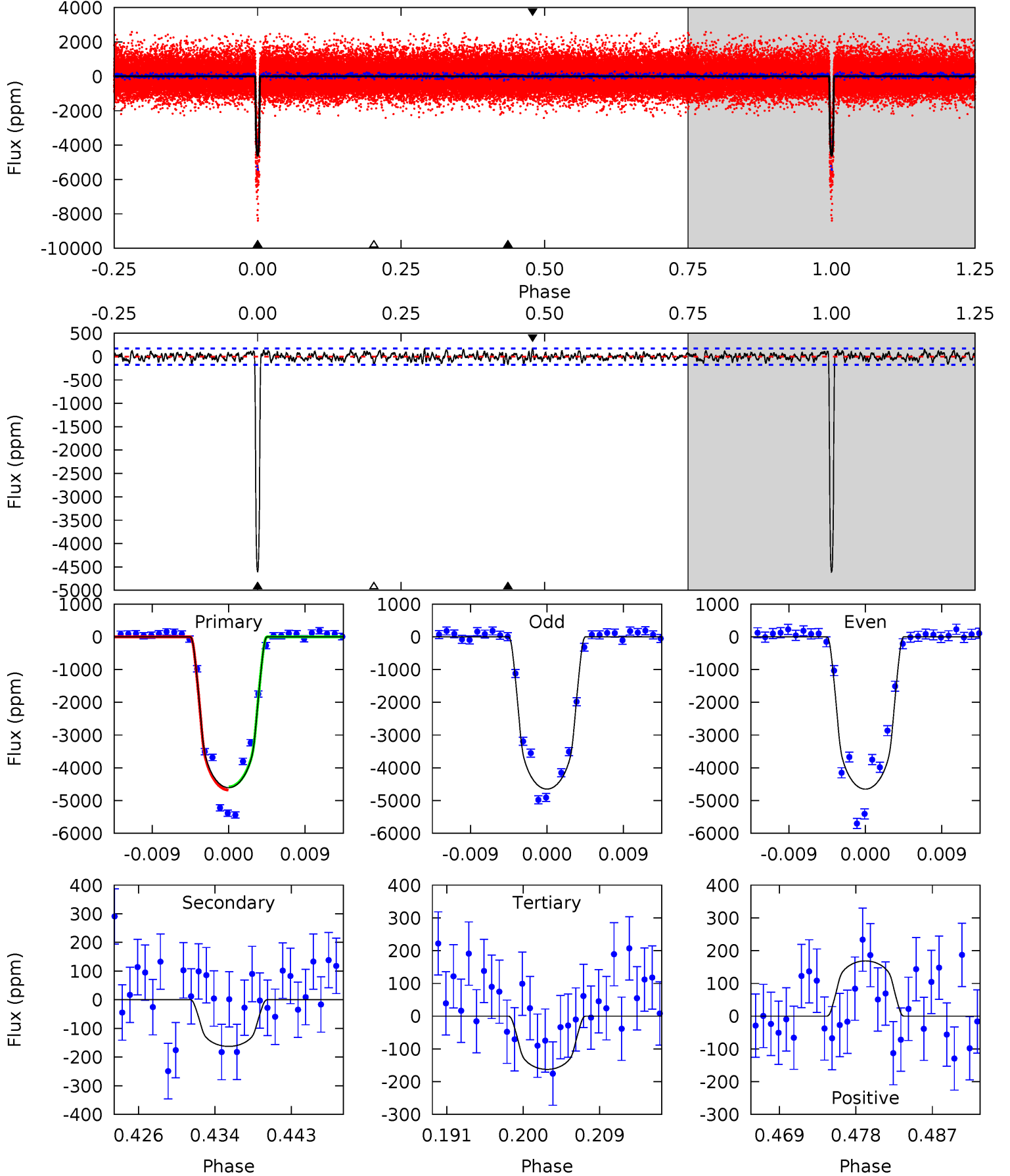
TCE 008256049-01 P= 16.371853 Days $T_0=140.021002$ (BKJD)



DV Model-Shift Uniqueness Test

008256049-01, P = 16.371926 Days, E = 123.645433 Days

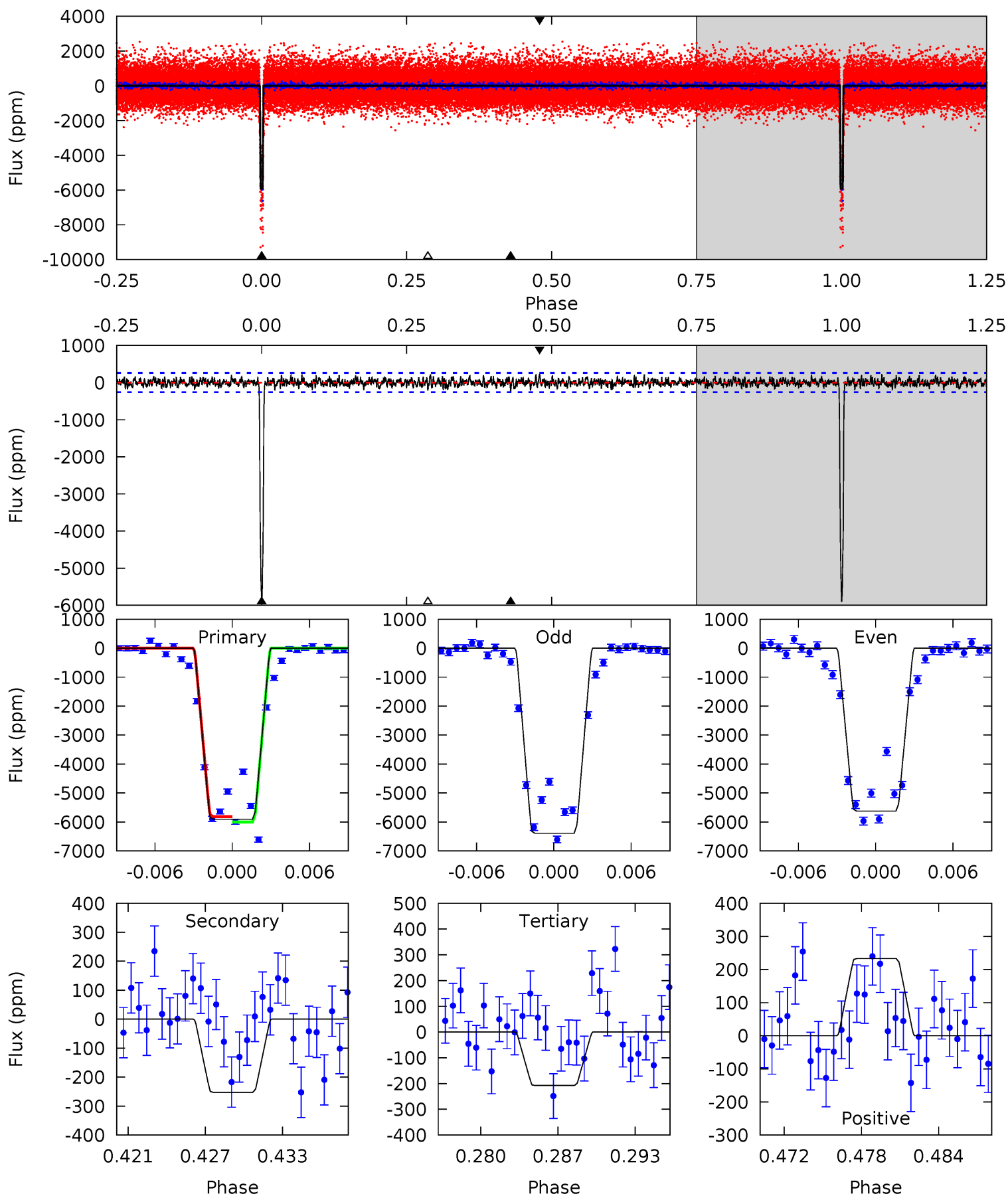
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
132.6	4.68	4.68	4.85	5.05	2.62	1.57	127.9	127.7	0.00	-0.17	0.03	1.38	0.04	0



Alt Model-Shift Uniqueness Test

008256049-01, P = 16.371853 Days, E = 123.649149 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
115.7	4.95	4.07	4.57	5.11	2.73	1.34	111.6	111.1	0.88	0.38	7.48	1.32	0.04	1.82



Stellar Parameters For KIC 008256049

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4187^{+125}_{-125}	$4.656^{+0.056}_{-0.024}$	$-0.280^{+0.300}_{-0.300}$	$0.592^{+0.043}_{-0.064}$	$0.580^{+0.064}_{-0.052}$	$3.935^{+1.066}_{-0.477}$
	+3%/-3%	+1%/-1%	+107%/-107%	+7%/-11%	+11%/-9%	+27%/-12%
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 008256049-01 / KOI 0909.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-163 ± 35	$3.22^{+0.62}_{-0.58}$	608^{+21}_{-23}	2739^{+173}_{-155}	96^{+55}_{-33}
Alt.	-253 ± 51	$5.38^{+0.66}_{-0.66}$	609^{+20}_{-21}	2543^{+116}_{-111}	54^{+19}_{-15}

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

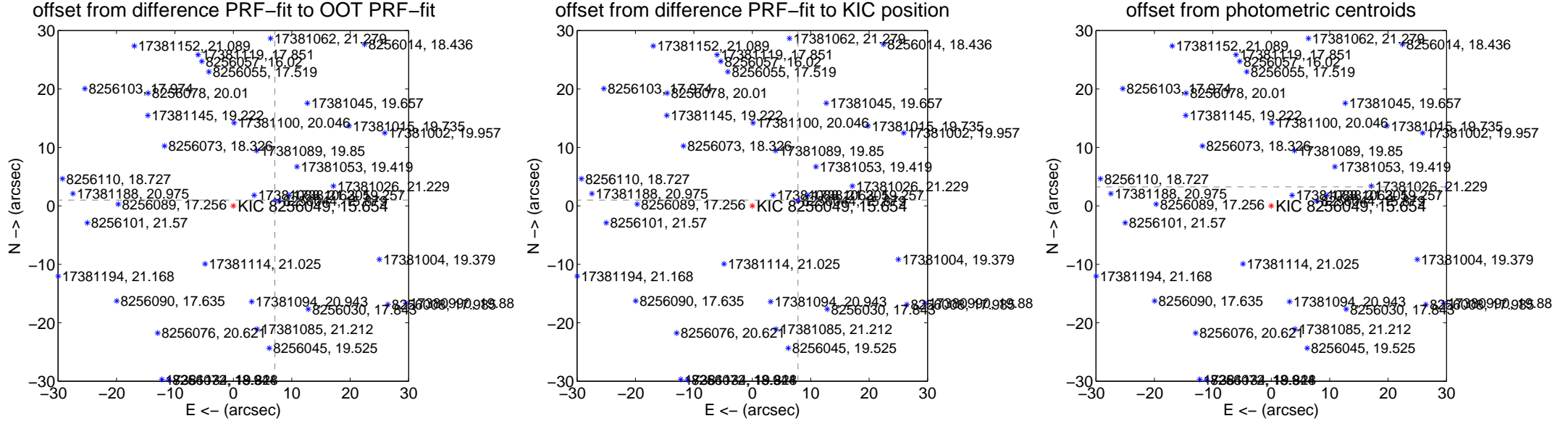
DV Centroid Data

Supplemental centroid analysis for 008256049-01. Kepler magnitude: 15.65. Transit SNR 55.54

There are 9 quarters with good PRF difference image offsets

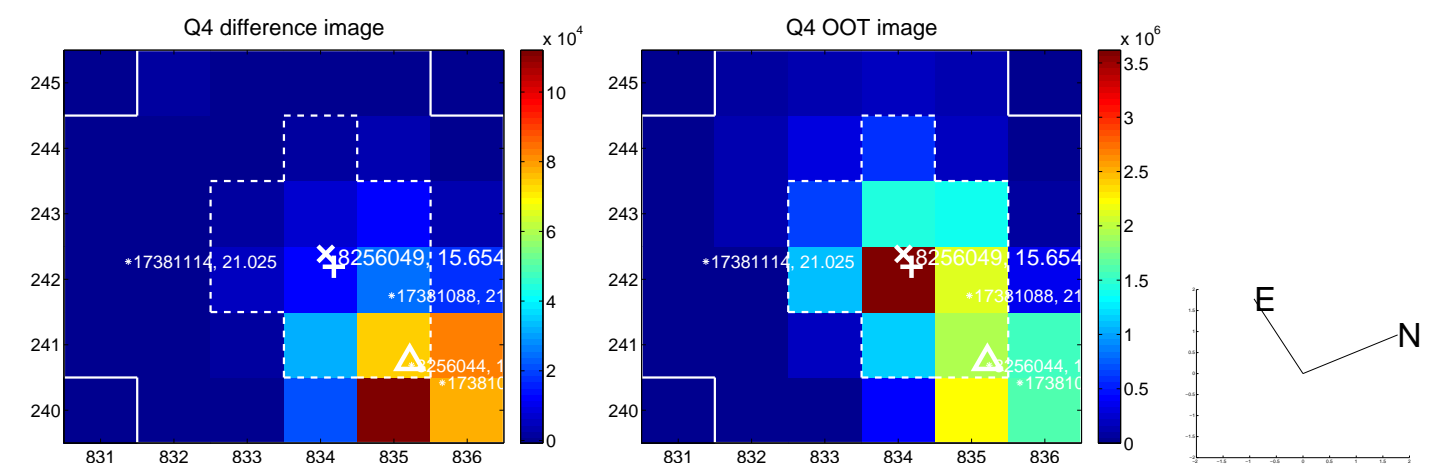
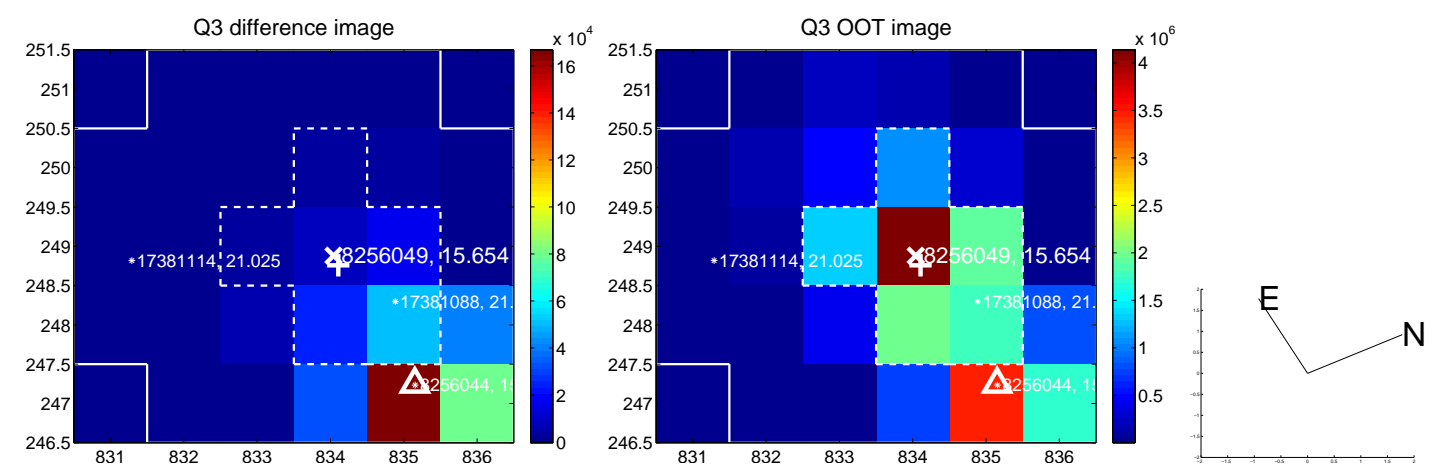
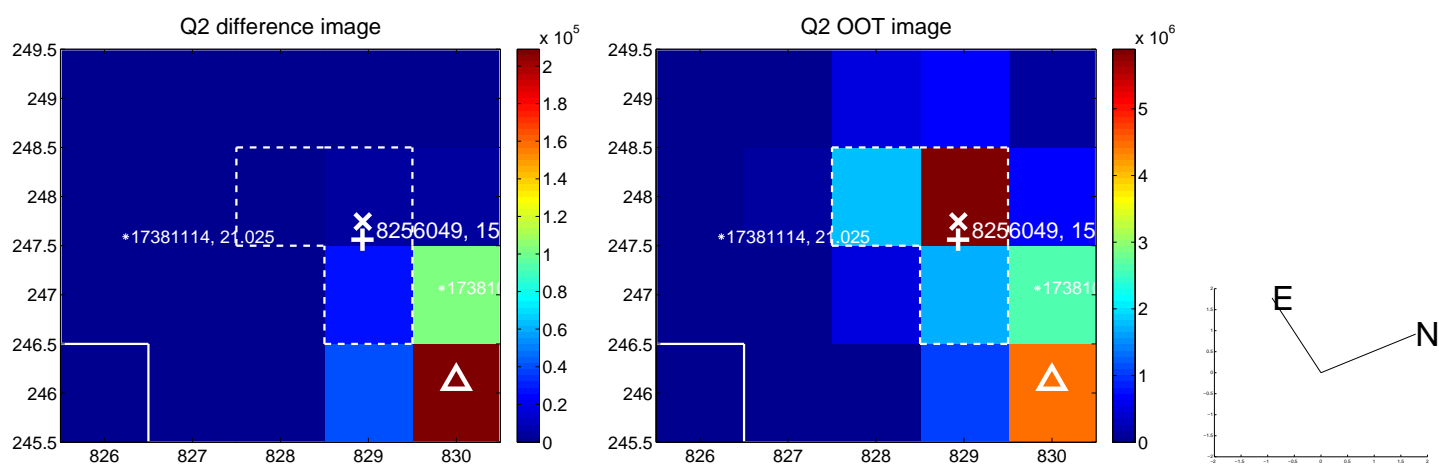
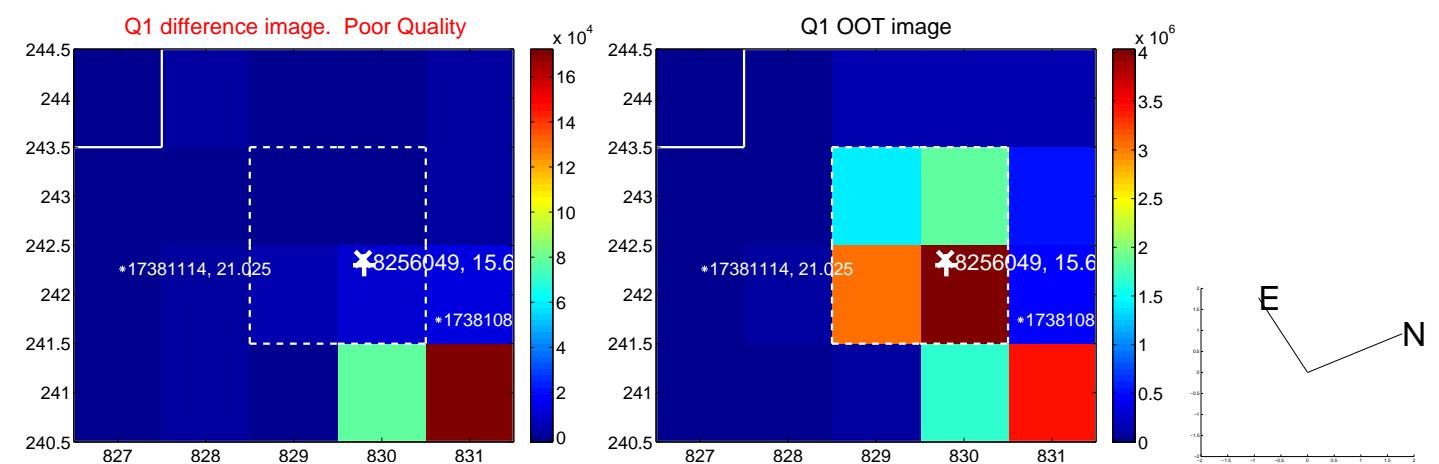
The direct PRF centroid is offset from the target star catalog position by about 0.67 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	7.168 \pm 0.074	96.48	-7.100 \pm 0.074	0.985 \pm 0.070
PRF-fit source offset from KIC position	7.884 \pm 0.071	110.68	-7.823 \pm 0.070	0.983 \pm 0.073
photometric centroid source offset	30.50 \pm 0.16	186.77	-30.32 \pm 0.16	3.24 \pm 0.13

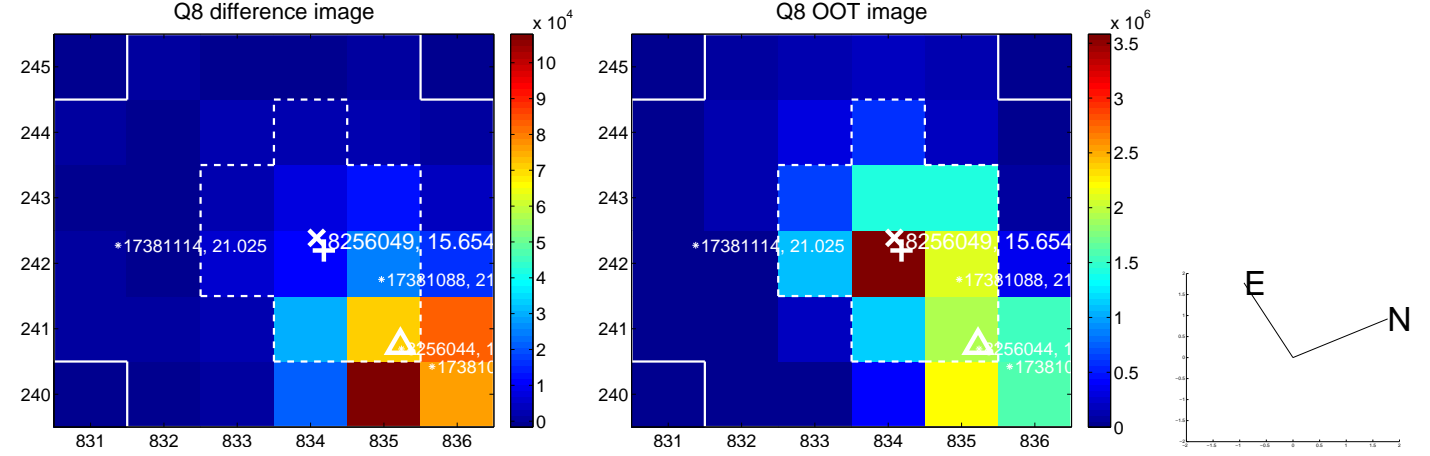
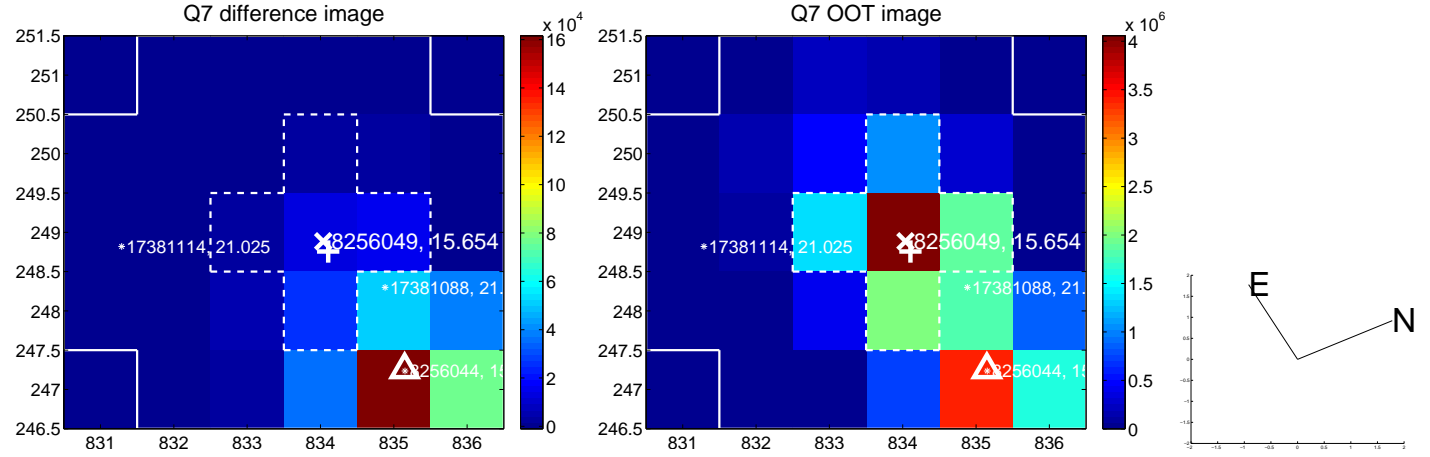
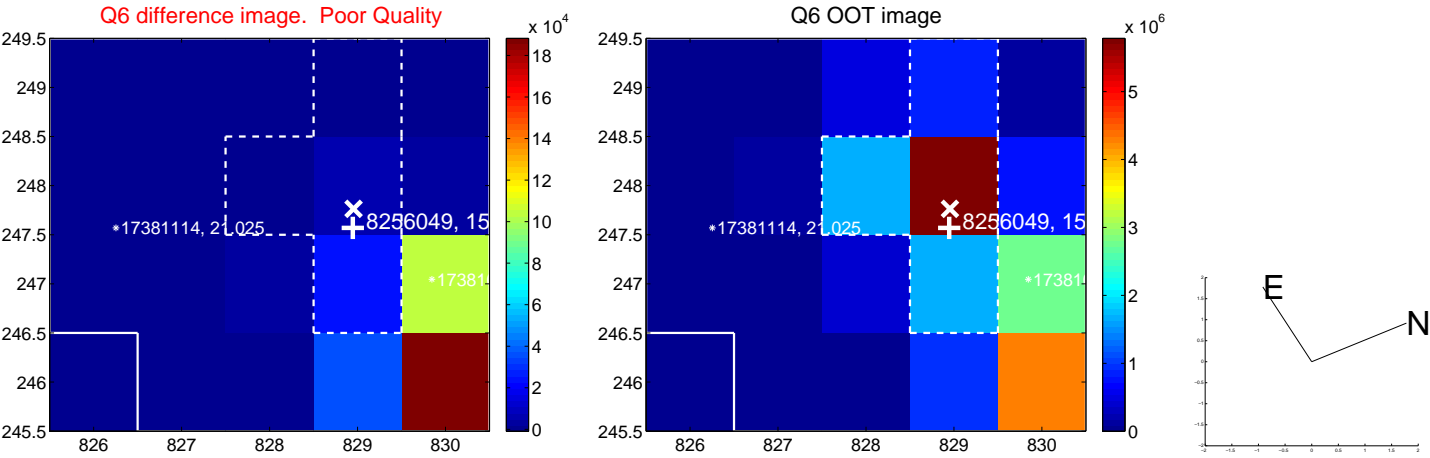
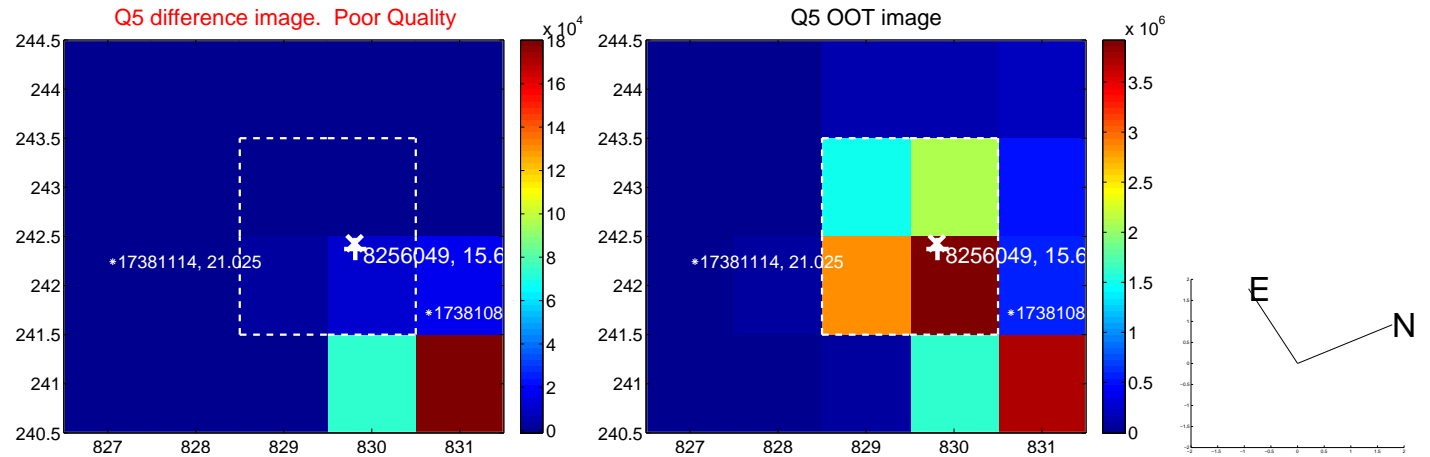


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

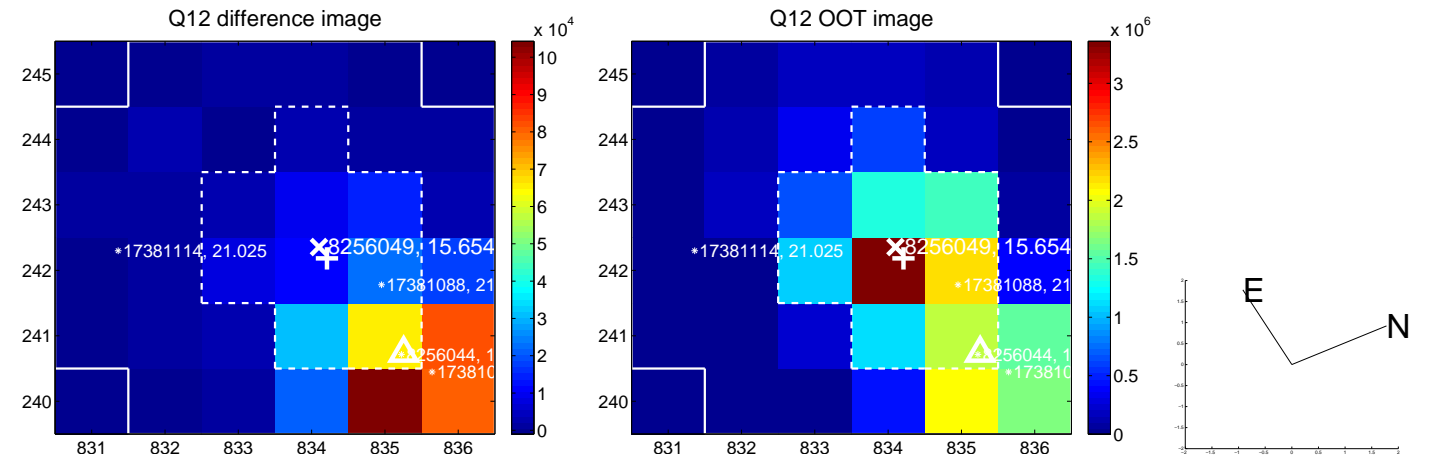
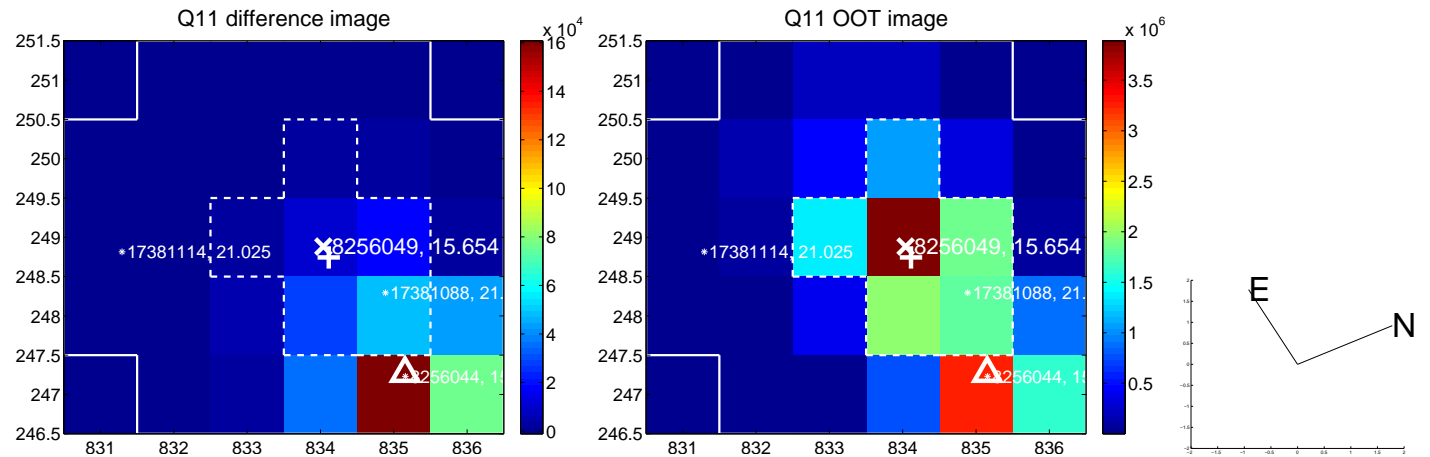
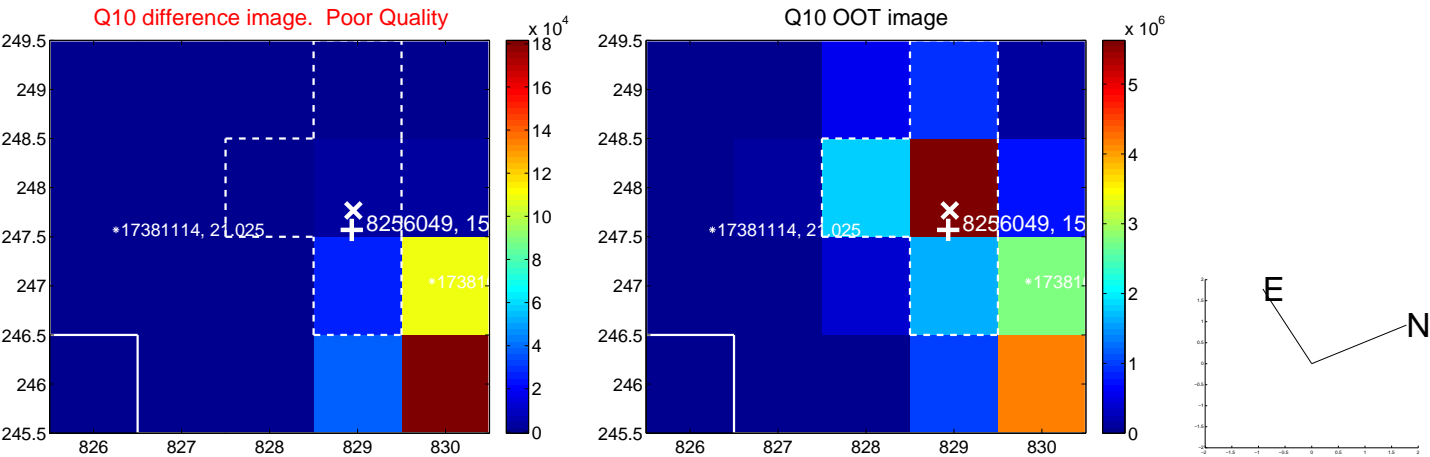
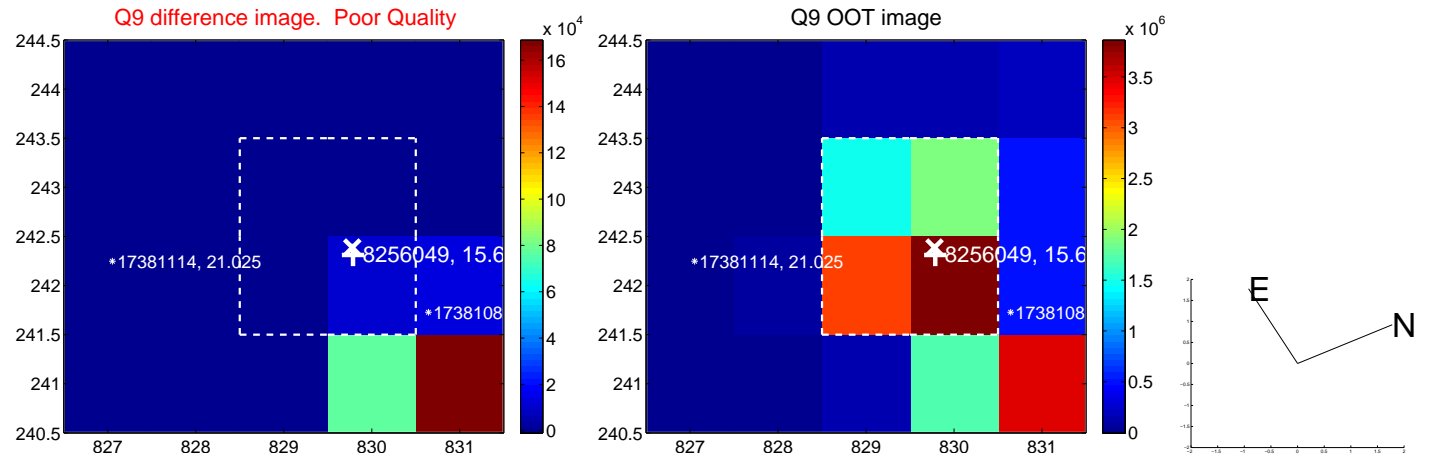
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



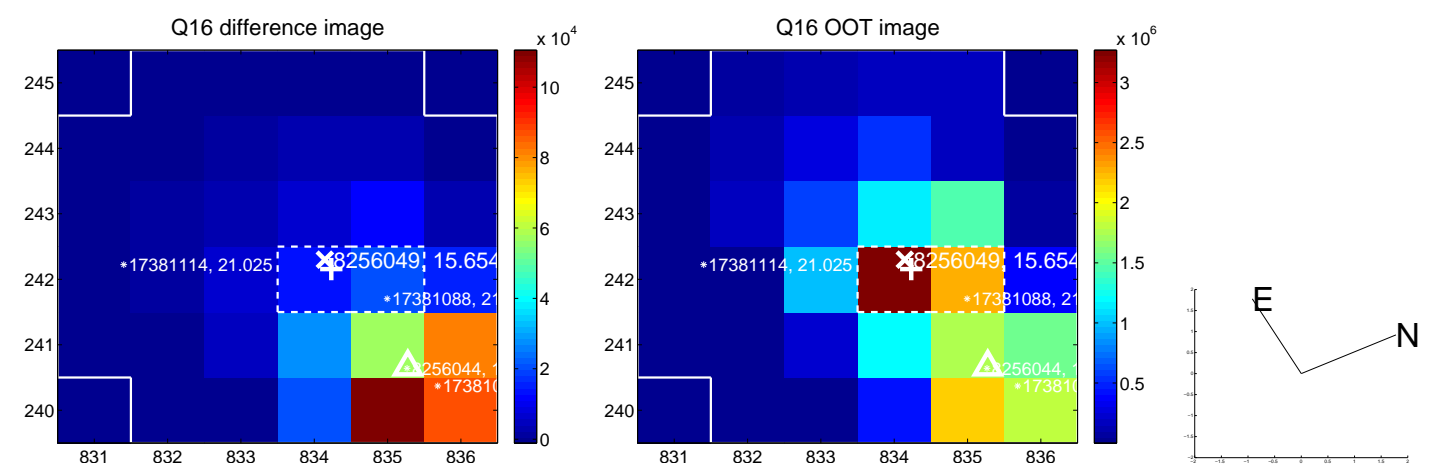
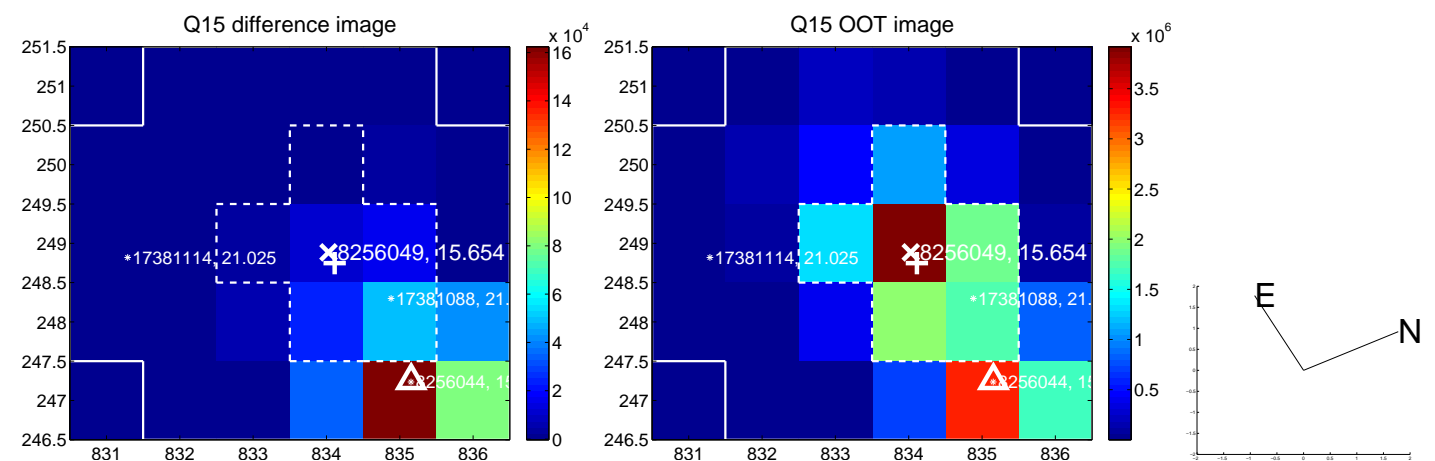
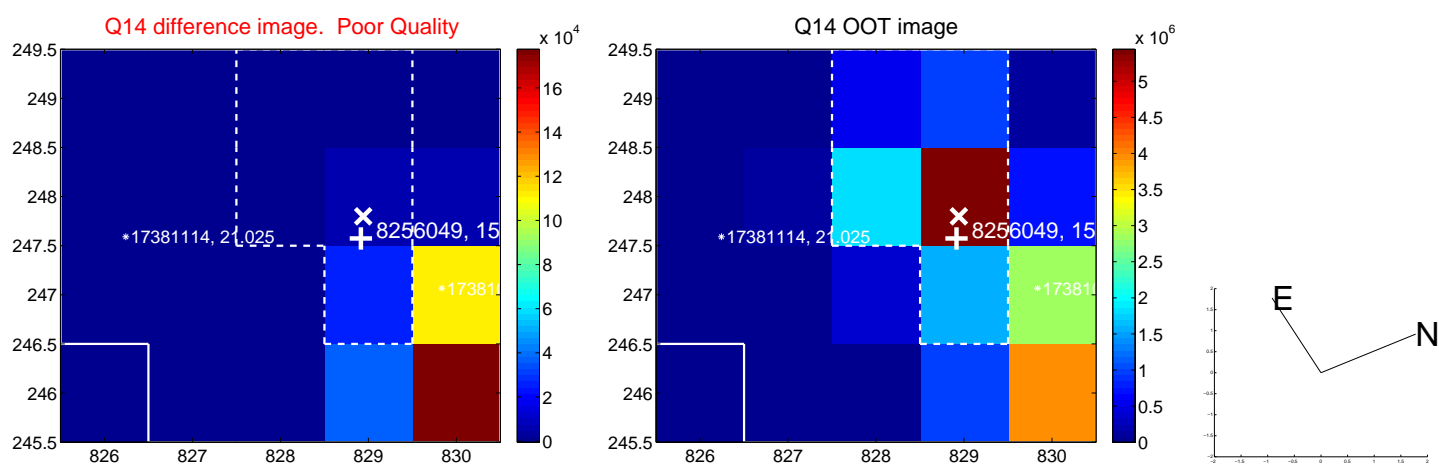
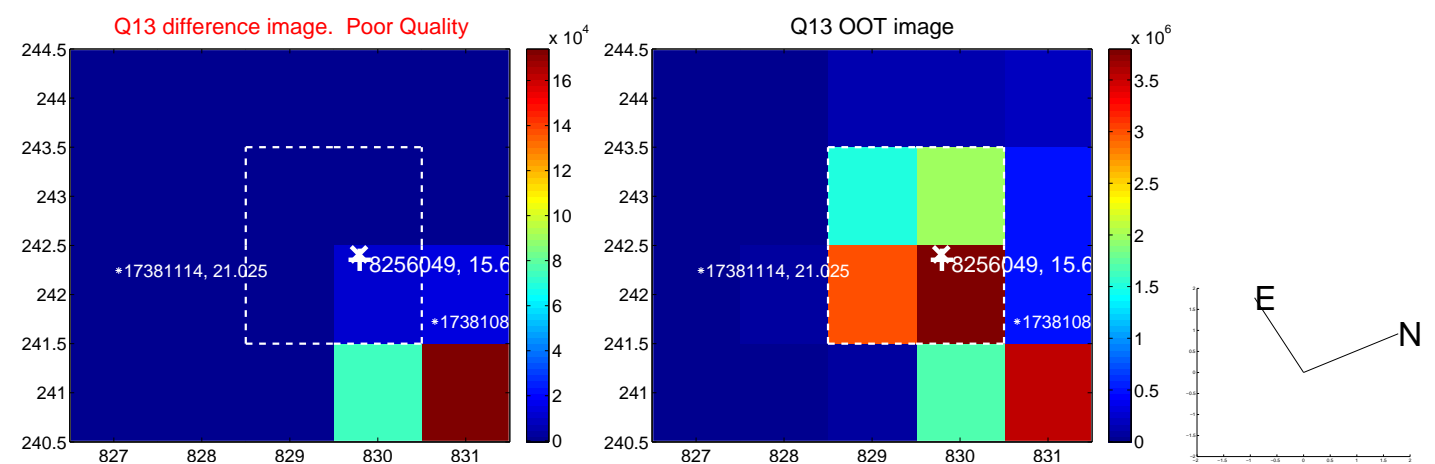
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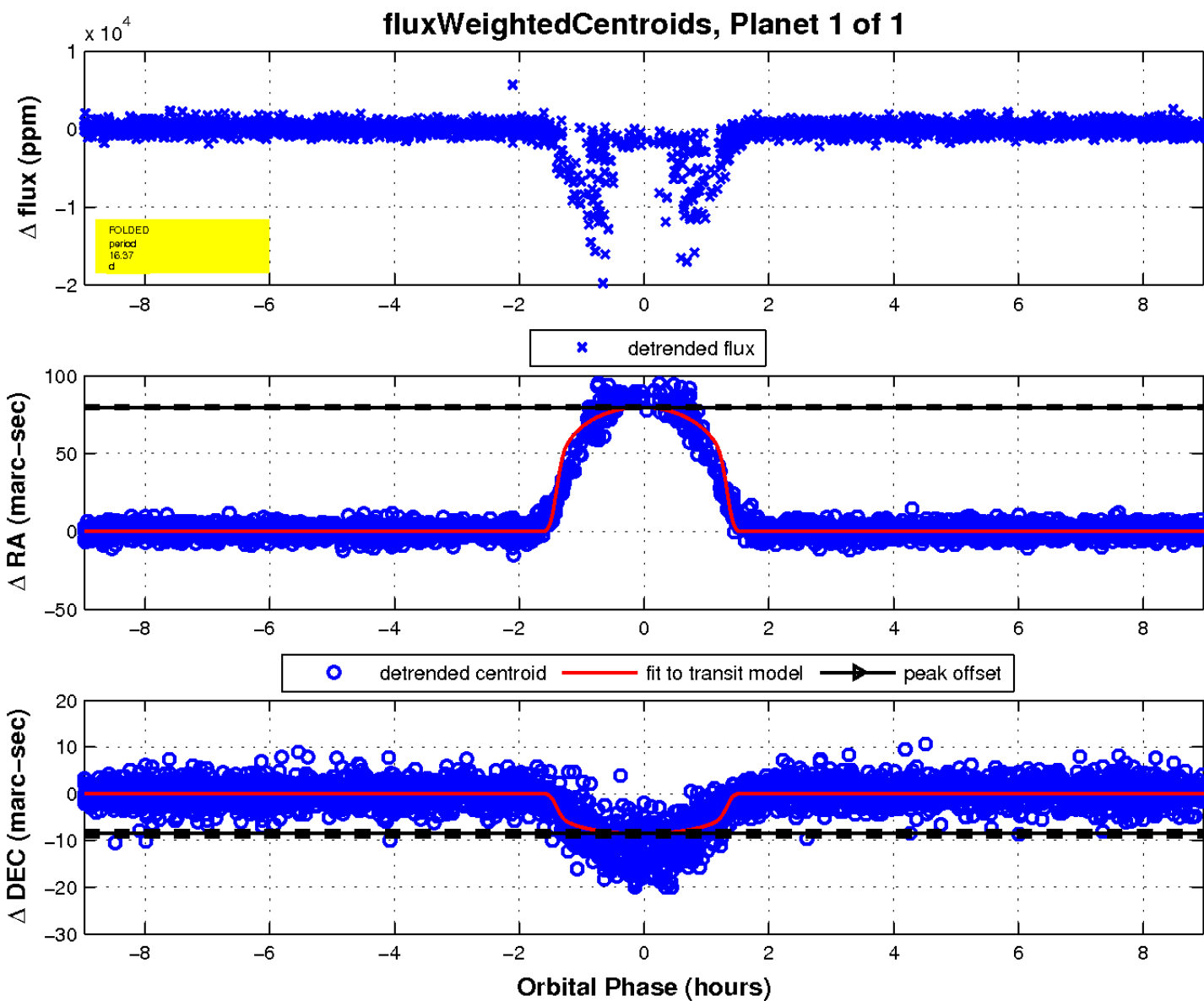
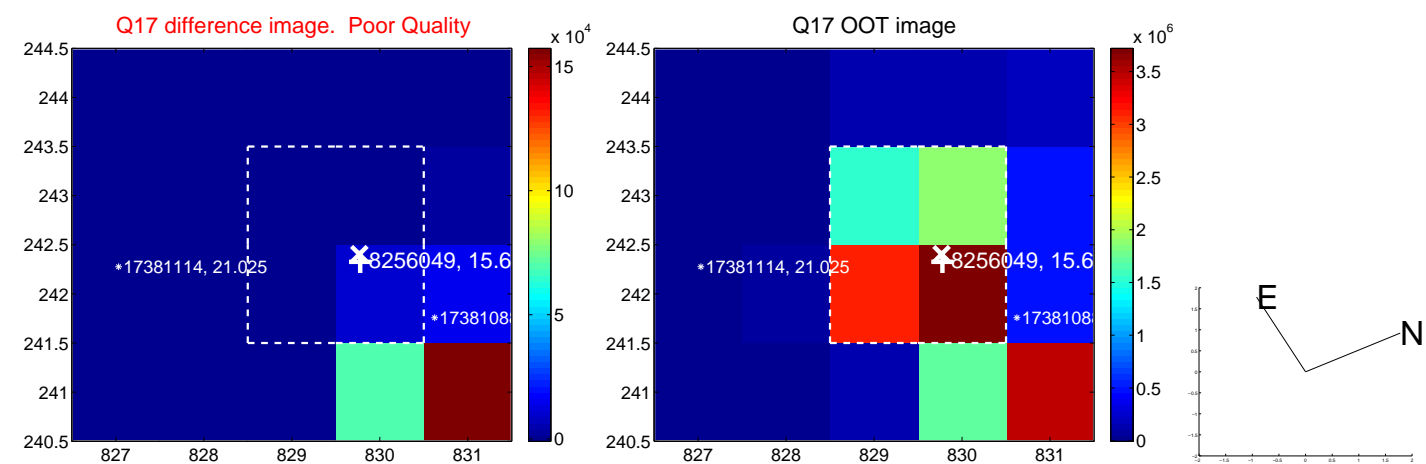
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UKIRT Image

Declination

