

KIC 012016267

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})
012016267-01	OBS	2590.02	22.791532	134.346855	39.2	13.091	9.3	8.6	1.64	6311	1.14	130.97

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
012016267-01	OBS	PC	0.54	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 012016267-01

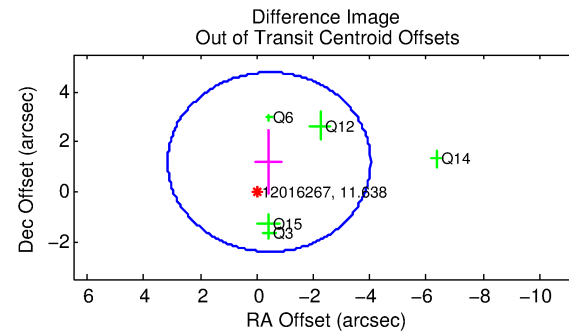
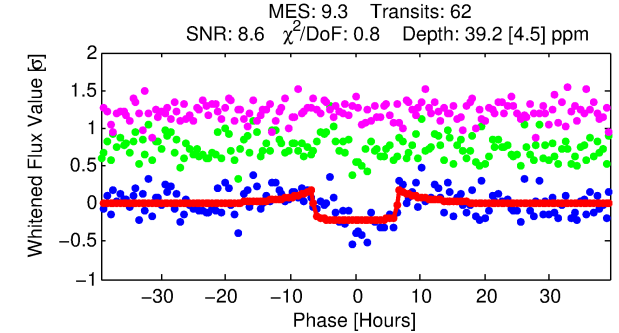
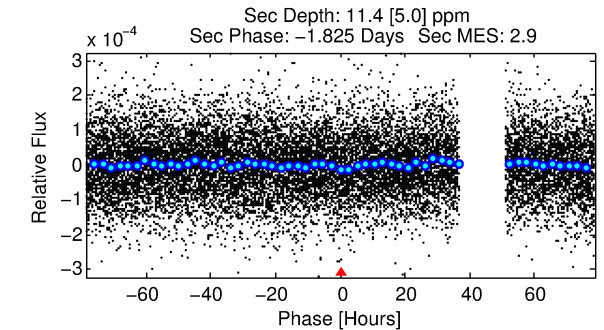
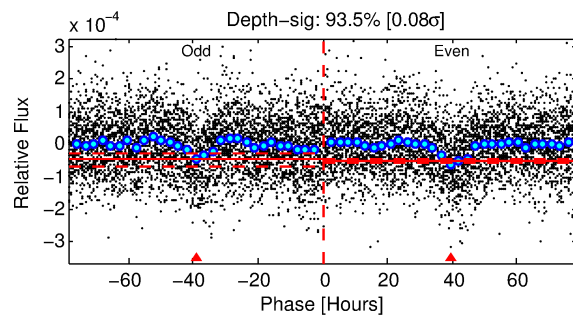
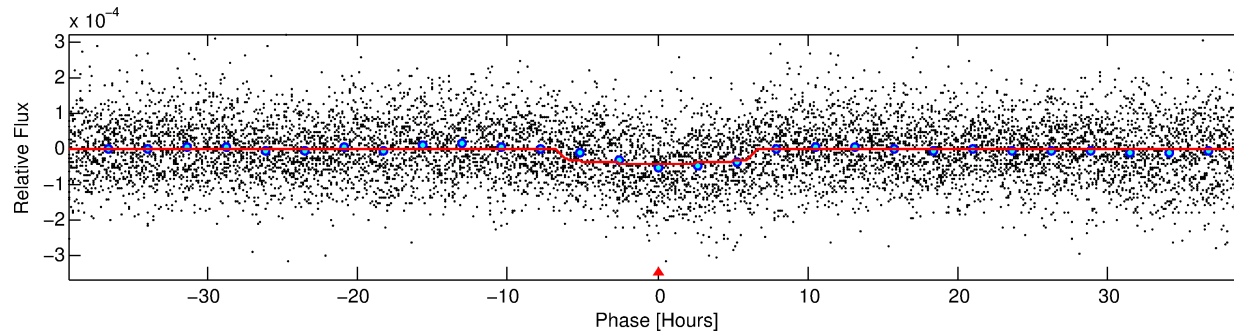
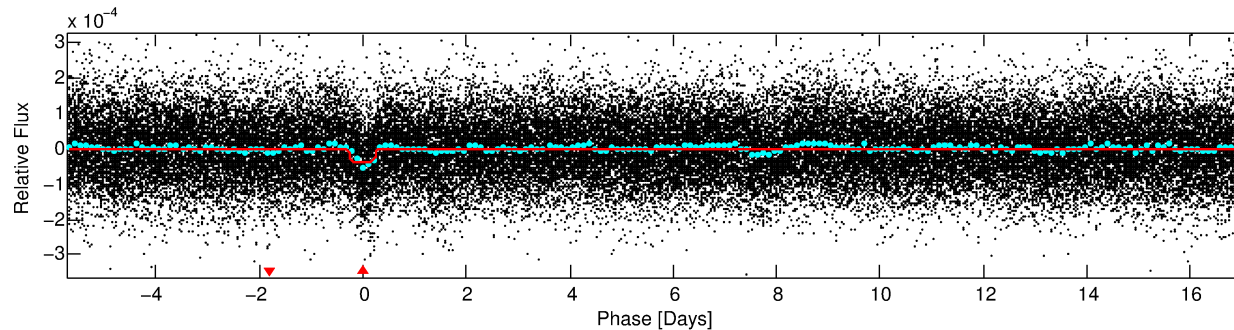
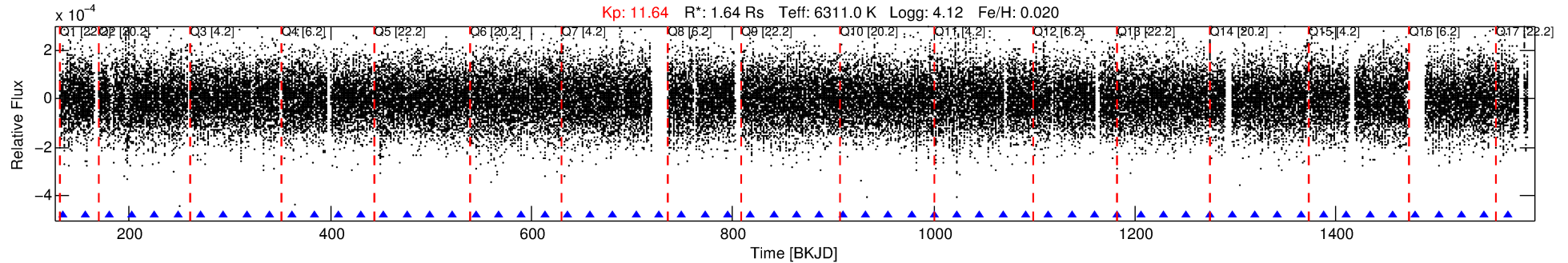
No Significant Match Found

DV One-Page Summary

KIC: 12016267 Candidate: 1 of 1 Period: 22.792 d

KOI: K02590.02 Corr: 0.823

Kp: 11.64 R*: 1.64 Rs Teff: 6311.0 K Logg: 4.12 Fe/H: 0.020



DV Fit Results:

Period = 22.79153 [0.00032] d
Epoch = 134.3469 [0.0115] BKJD
Rp/R* = 0.0064 [0.0012]
a/R* = 8.10 [7.22]
b = 0.80 [0.40]
Seff = 130.97 [40.16]
Teq = 863 [66] K
Rp = 1.14 [0.32] Re
a = 0.1711 [0.0332] AU
Ag = 141.13 [91.36] [1.53σ]
Teffp = 4597 [668] K [5.56σ]

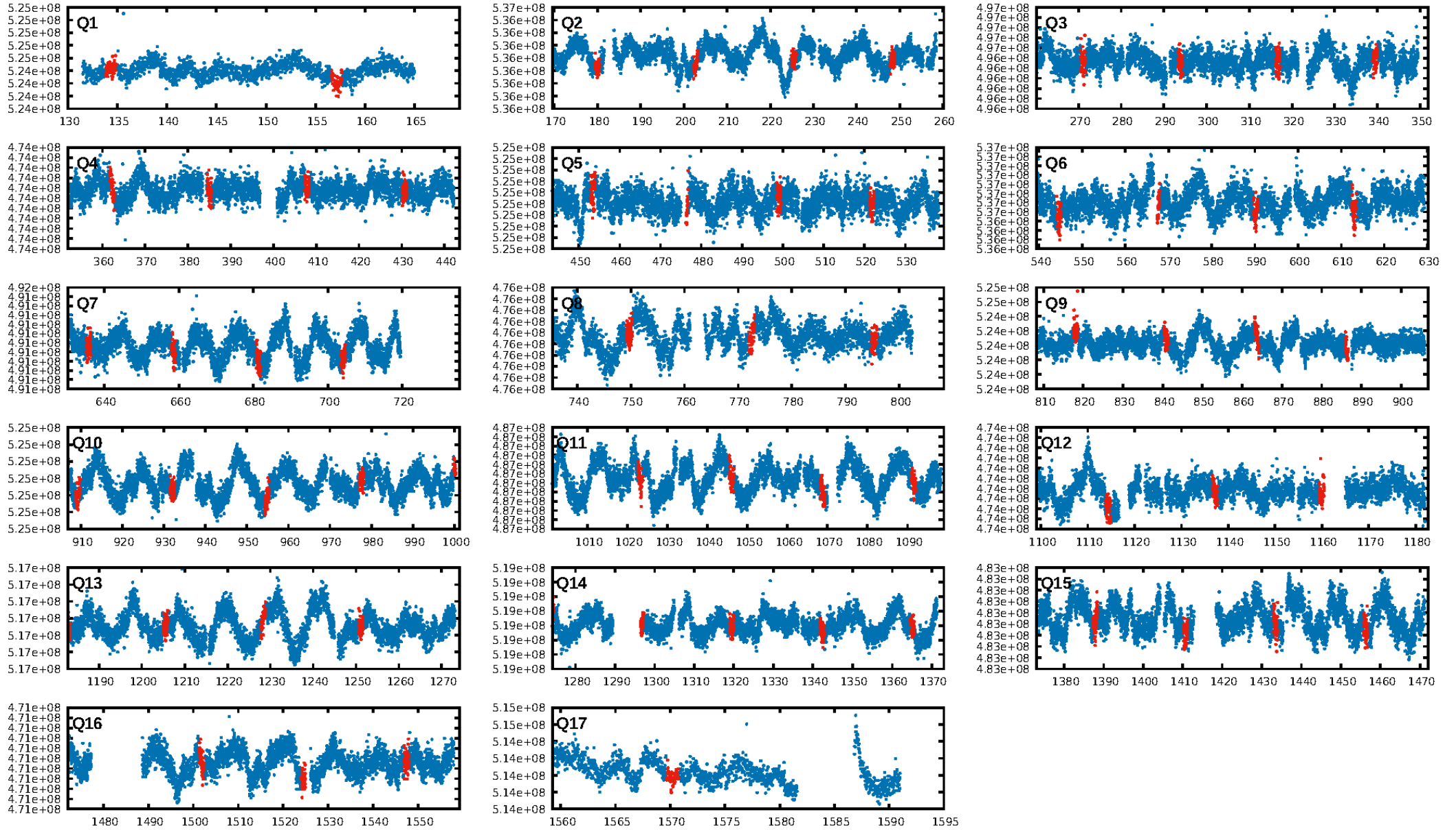
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 86.6%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 8.50e-20
RollingBand-fgt: 1.00 [59/59]
GhostDiagnostic-chr: 1.844
Centroid-sig: 0.0%
Centroid-so: 3.877 arcsec [3.94σ]
OotOffset-rm: 1.261 arcsec [1.05σ]
KicOffset-rm: 1.182 arcsec [0.95σ]
OotOffset-st: 2/2/1/0 [5]
KicOffset-st: 2/2/1/0 [5]
DiffImageQuality-fgm: 0.60 [3/5]
DiffImageOverlap-fno: 1.00 [17/17]

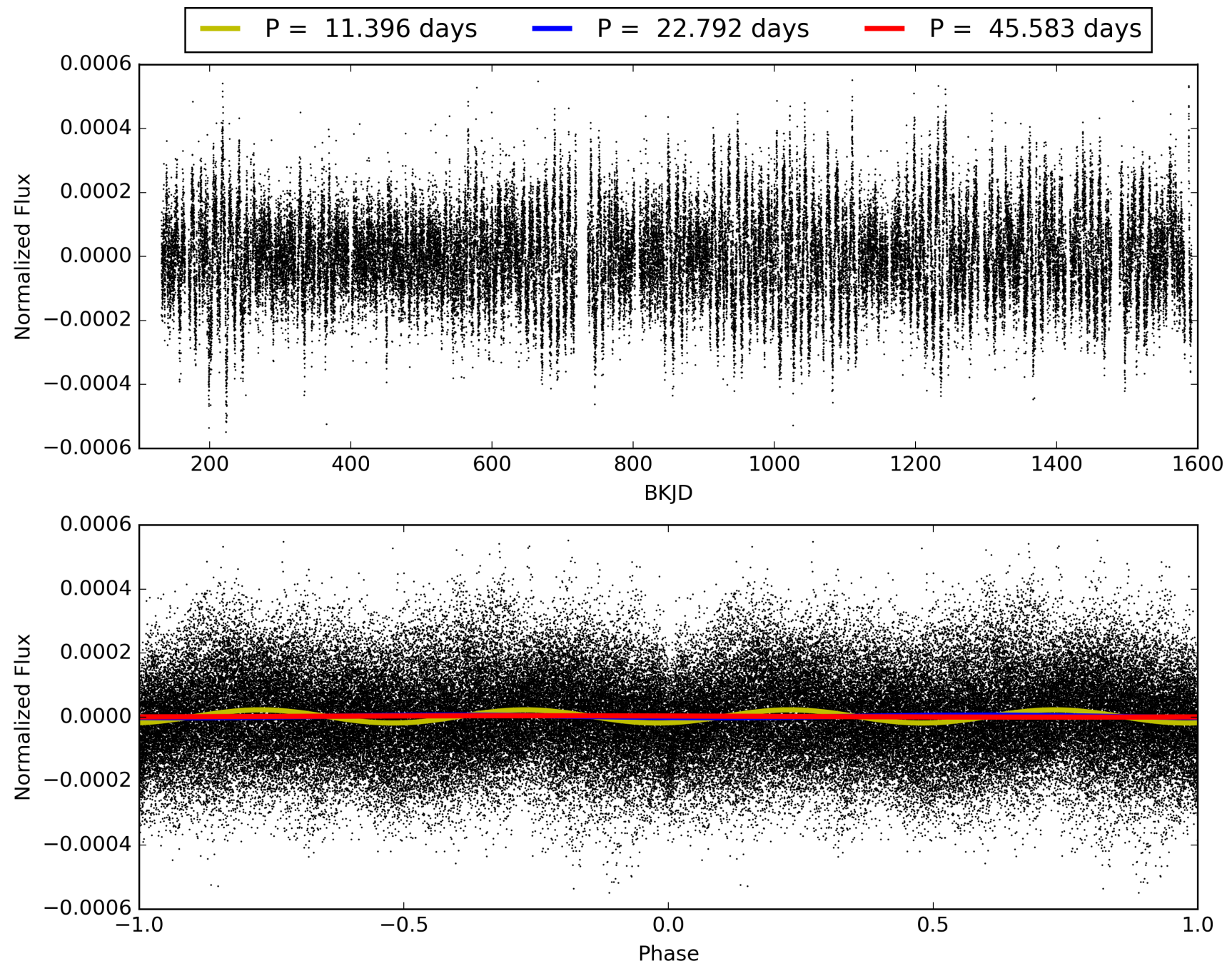
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 28-Jan-2016 21:00:36 Z

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

TCE 012016267-01, PDC Light Curves

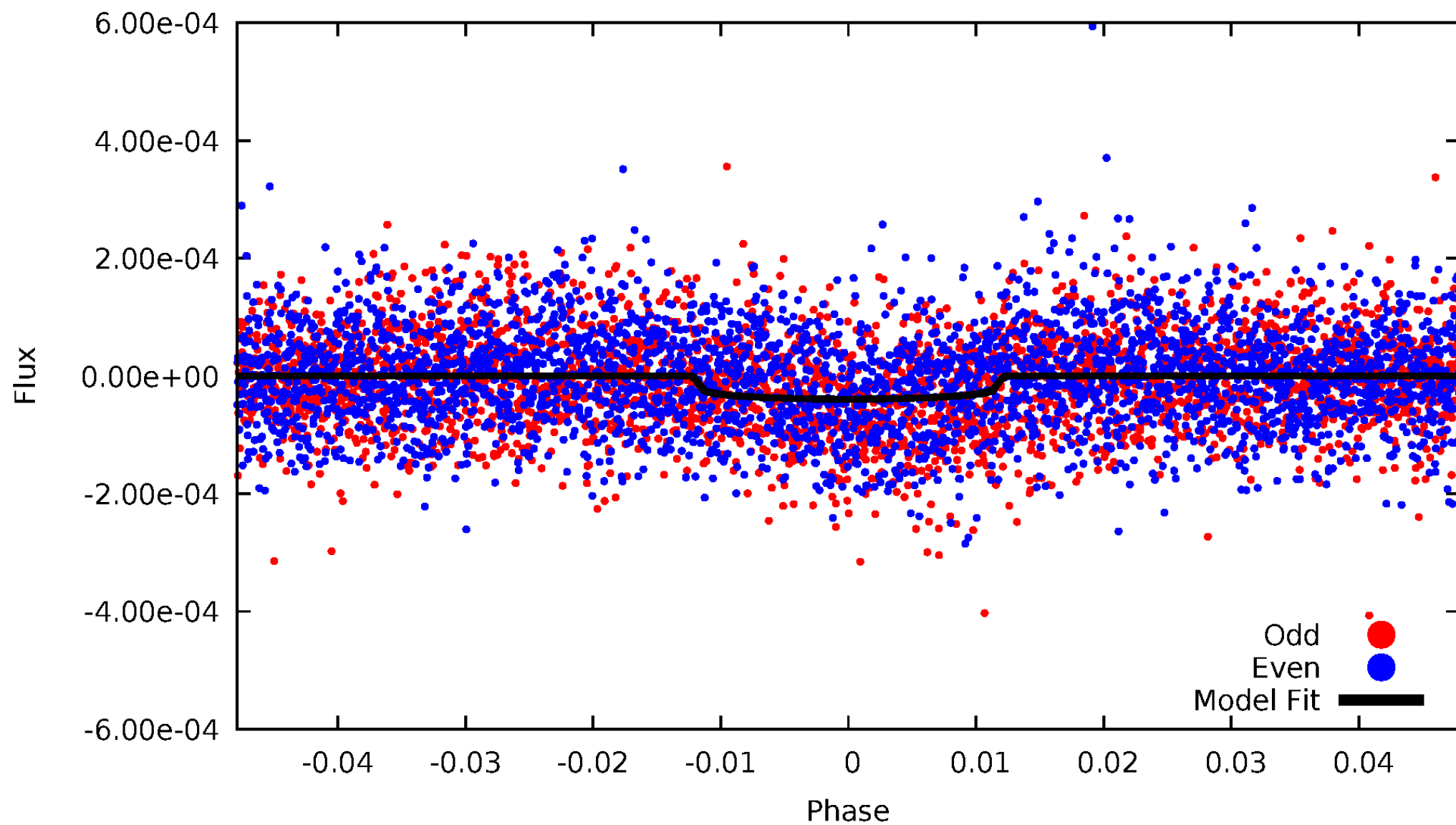


TCE 012016267-01



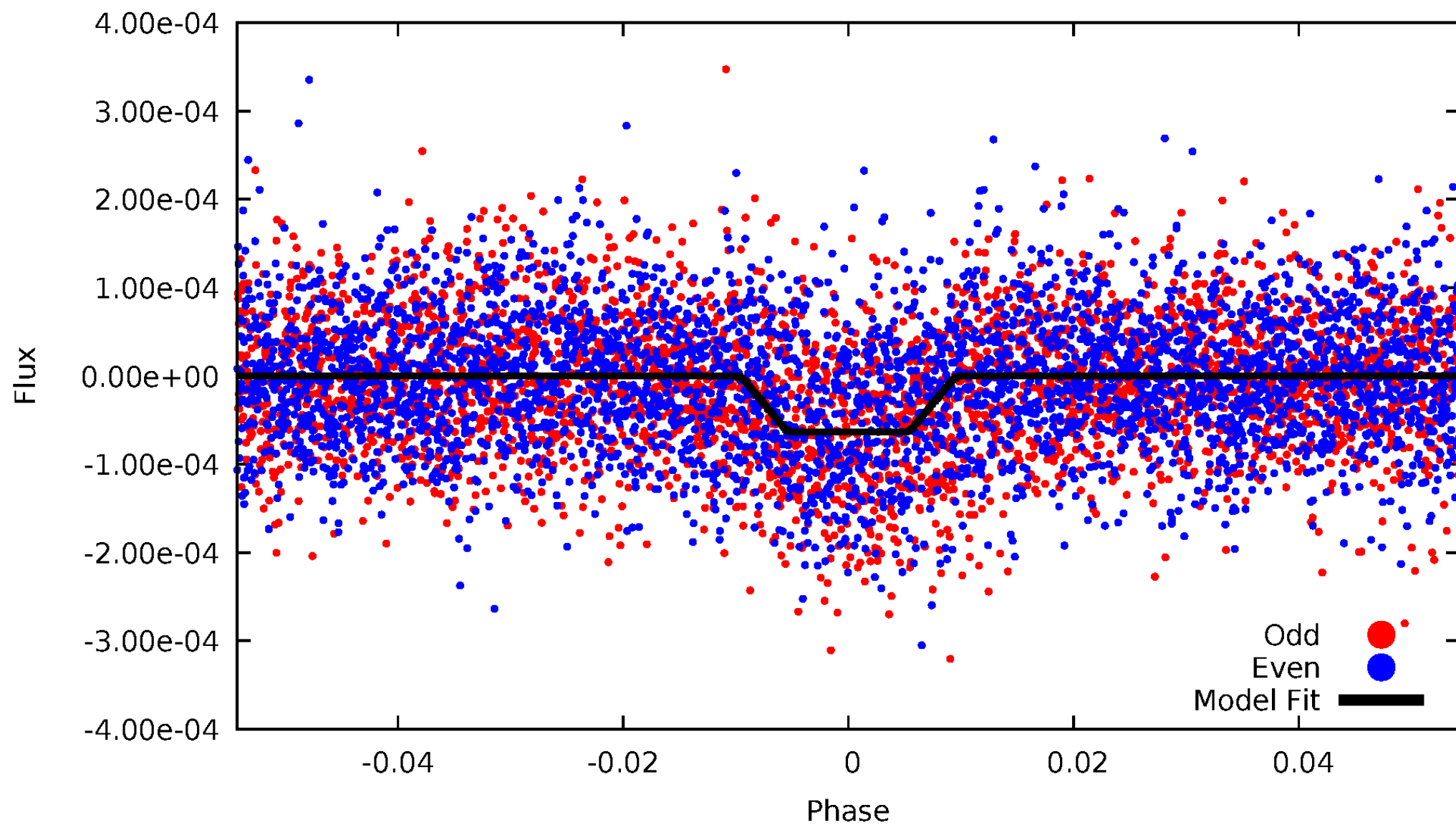
DV Odd/Even

TCE 012016267-01

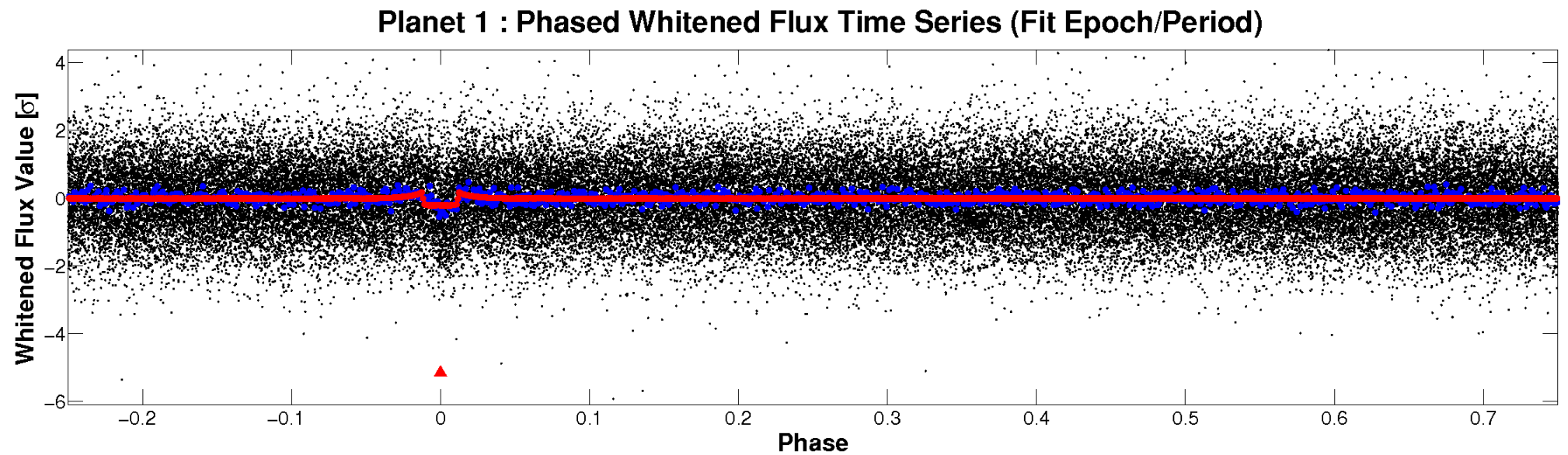
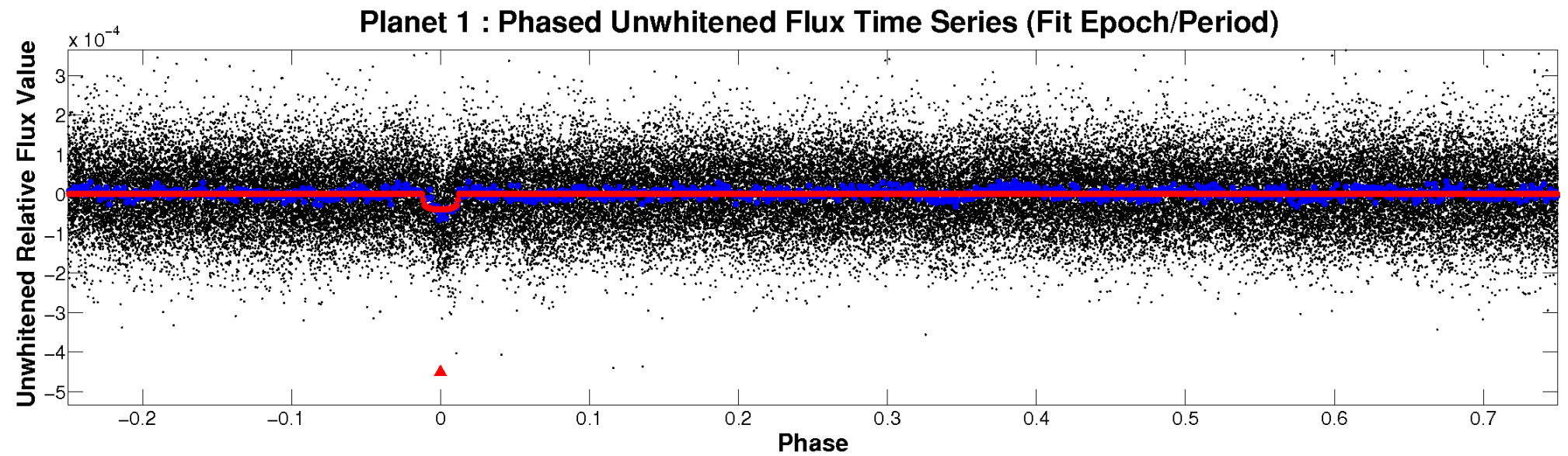


ALT Odd/Even

TCE 012016267-01

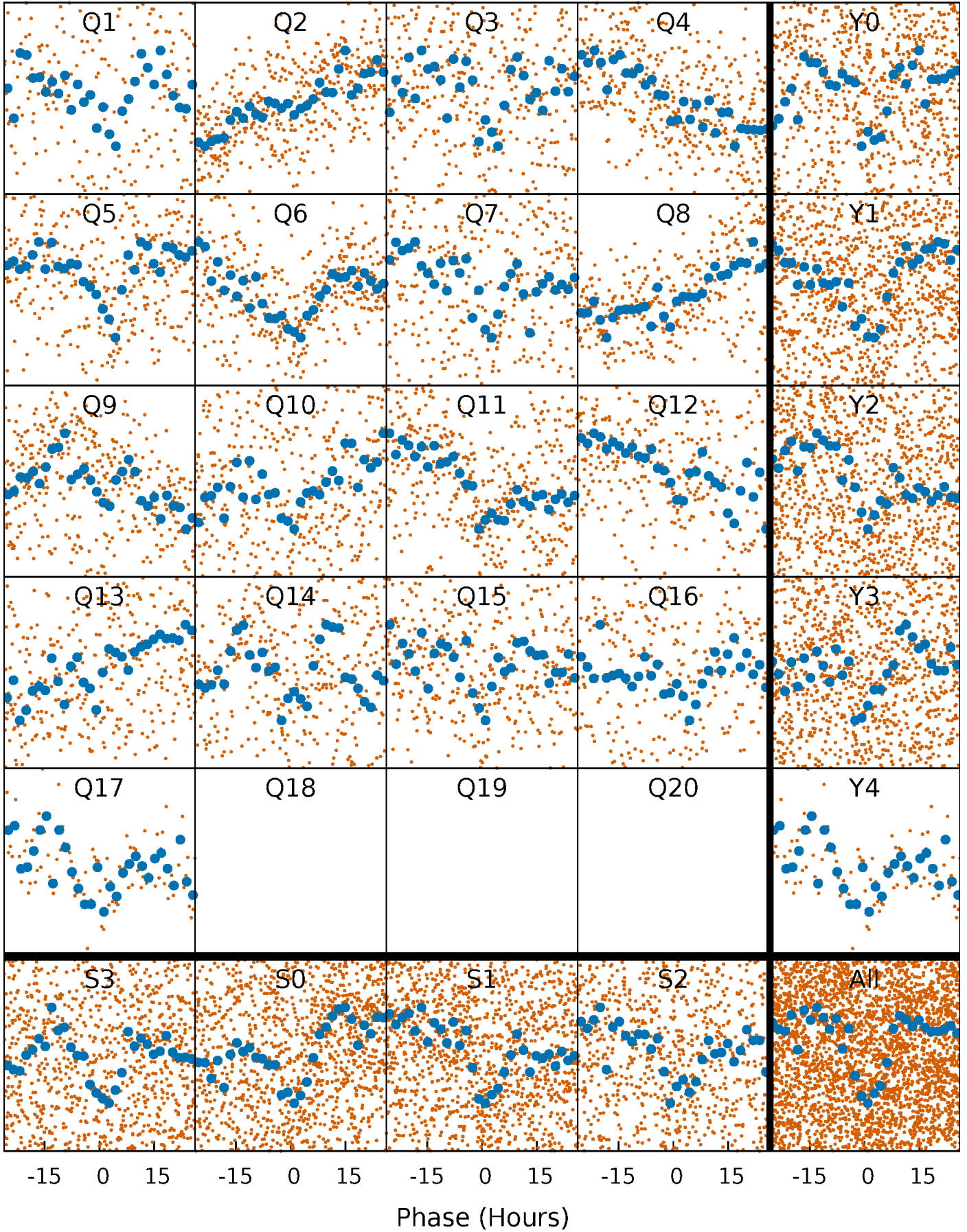


Non-Whitened Vs. Whitened Light Curve



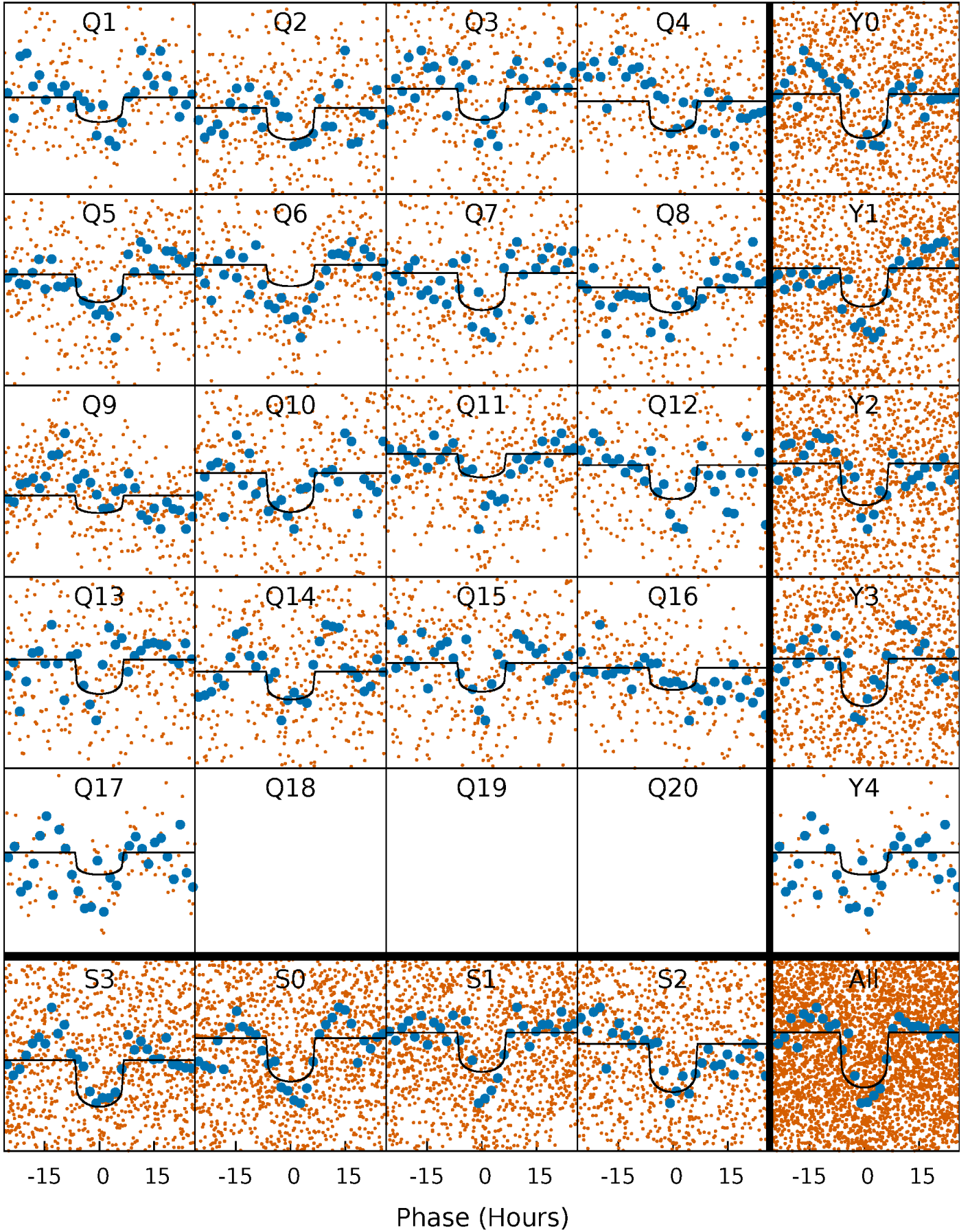
PDC Quarter-Phased Transit Curves

TCE 012016267-01 P= 22.791532 Days $T_0=134.346855$ (BKJD)



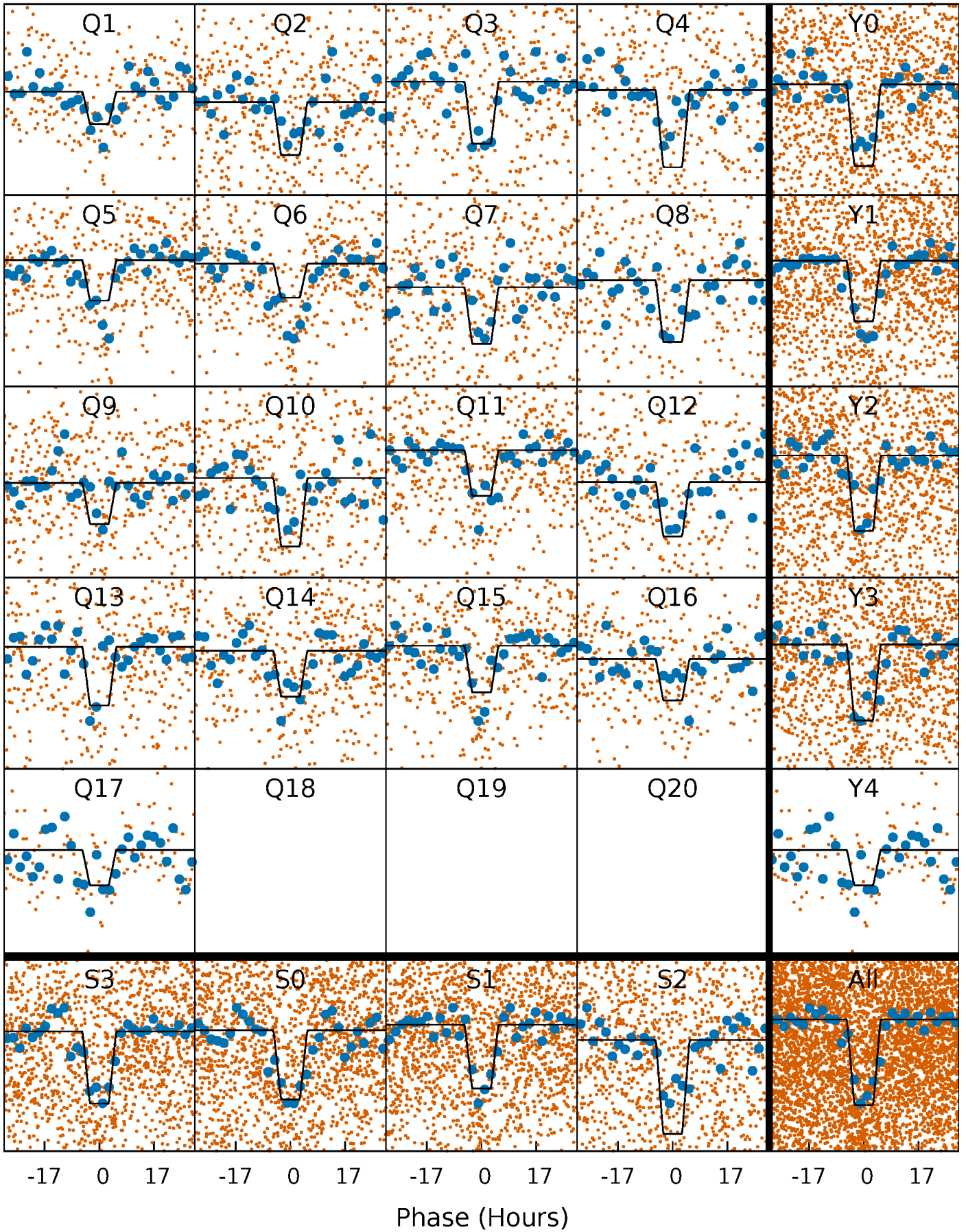
DV Quarter-Phased Transit Curves

TCE 012016267-01 P= 22.791532 Days $T_0=134.346855$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

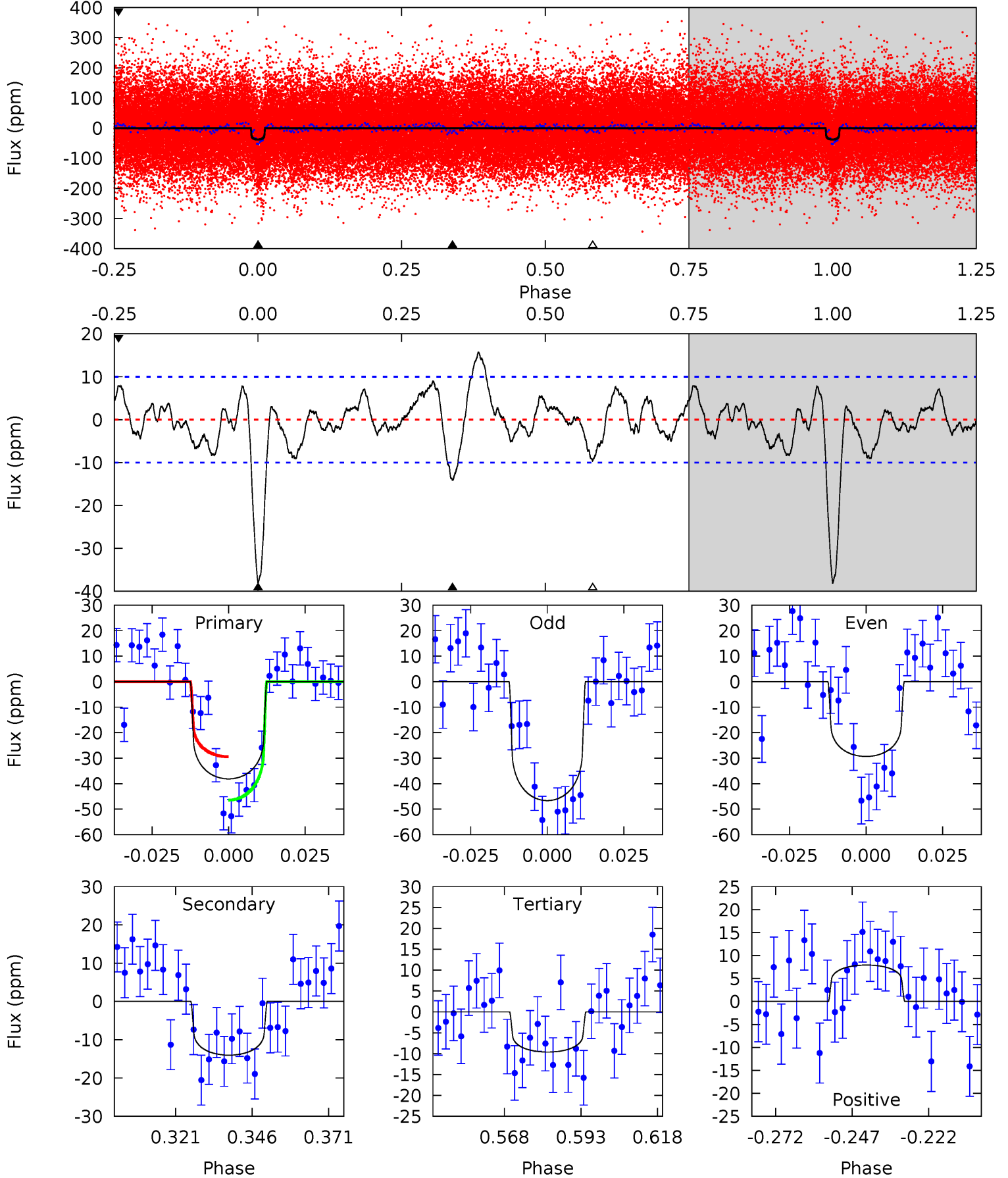
TCE 012016267-01 P= 22.790433 Days $T_0=134.426836$ (BKJD)



DV Model-Shift Uniqueness Test

012016267-01, $P = 22.791532$ Days, $E = 111.555323$ Days

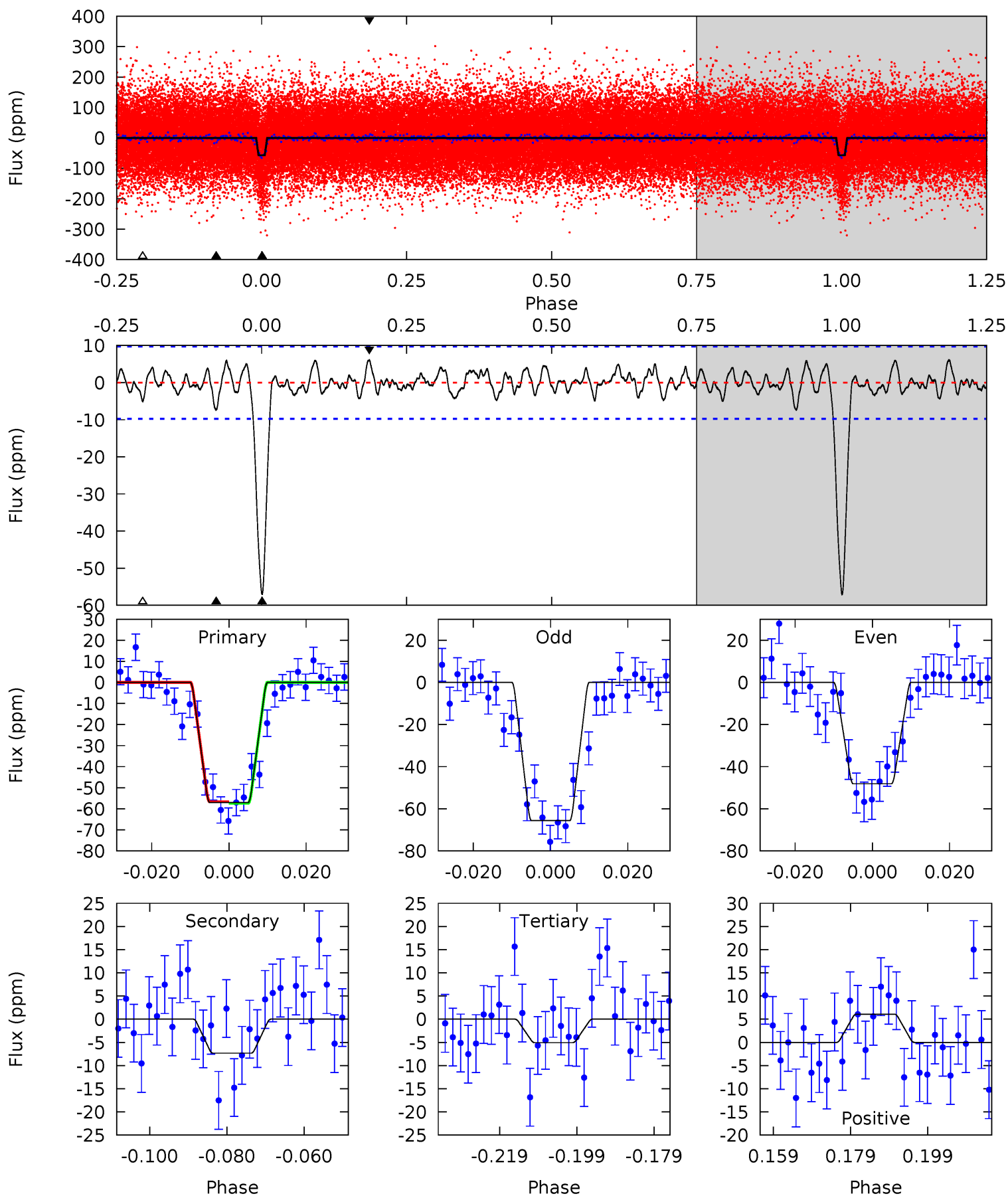
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.4	6.78	4.65	3.84	4.85	2.25	2.21	13.8	14.6	2.13	2.95	4.19	0.90	0.29	4.11



Alt Model-Shift Uniqueness Test

012016267-01, $P = 22.790433$ Days, $E = 111.636403$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
28.7	3.68	2.54	3.05	4.89	2.33	1.13	26.2	25.6	1.14	0.63	4.40	1.05	0.10	0.17



Stellar Parameters For KIC 012016267

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6311^{+113}_{-126}	$4.116^{+0.168}_{-0.112}$	$0.020^{+0.150}_{-0.150}$	$1.642^{+0.293}_{-0.358}$	$1.286^{+0.114}_{-0.152}$	$0.409^{+0.348}_{-0.137}$
	+2%/-2%	+4%/-3%	+750%/-750%	+18%/-22%	+9%/-12%	+85%/-34%
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 012016267-01 / KOI 2590.02

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-14 ± 2	$1.12^{+0.26}_{-0.23}$	1200^{+61}_{-69}	4934^{+479}_{-364}	177^{+117}_{-61}
Alt.	-7 ± 2	$1.41^{+0.27}_{-0.26}$	1201^{+60}_{-64}	3987^{+290}_{-278}	58^{+36}_{-21}

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

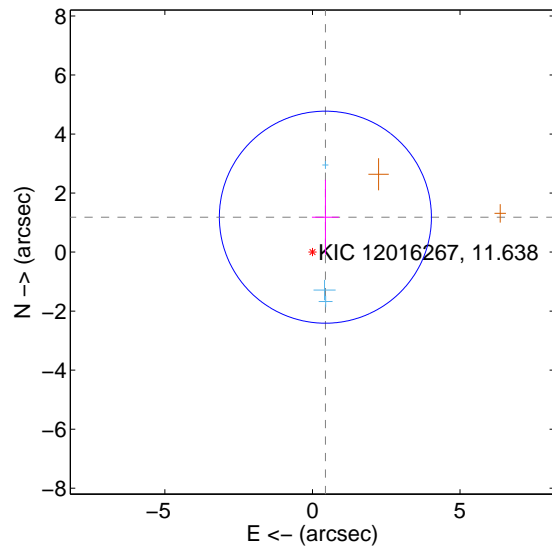
Supplemental centroid analysis for 012016267-01. **Kepler magnitude: 11.64.** Transit SNR 8.58

There are 3 quarters with good PRF difference image offsets

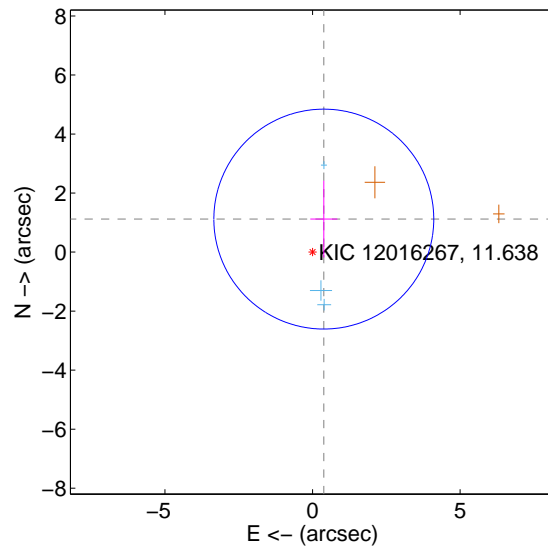
The direct PRF centroid is offset from the target star catalog position by about 0.13 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.261 ± 1.197	1.05	-0.439 ± 0.457	1.183 ± 1.266
PRF-fit source offset from KIC position	1.182 ± 1.242	0.95	-0.382 ± 0.458	1.118 ± 1.303
photometric centroid source offset	3.88 ± 0.99	3.94	-1.00 ± 0.92	-3.75 ± 0.99

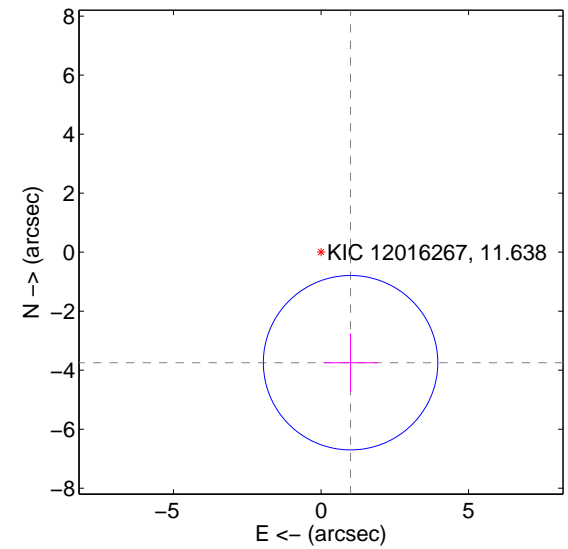
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

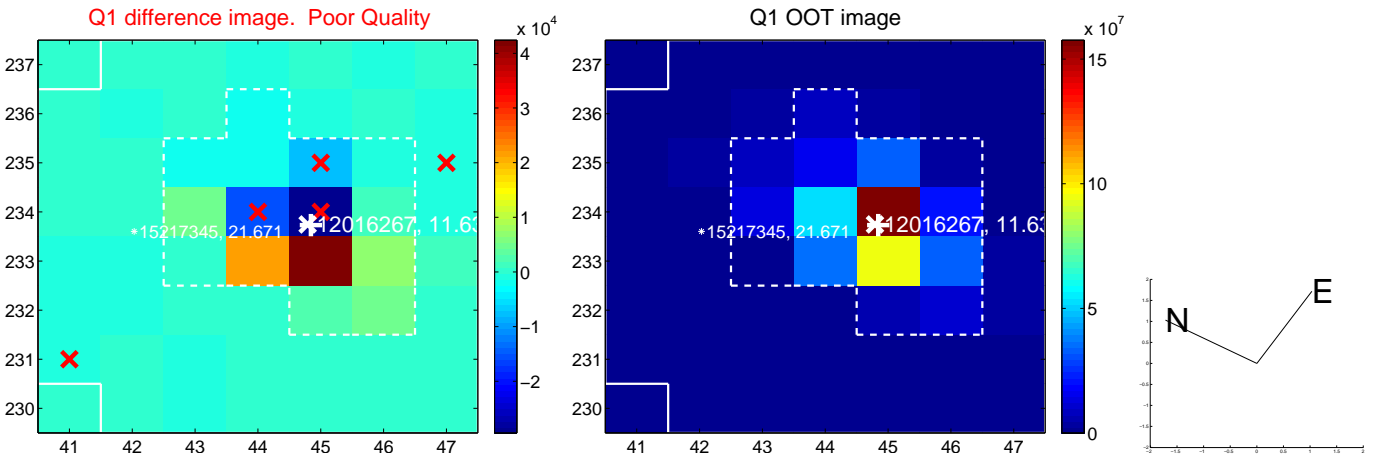


offset from photometric centroids

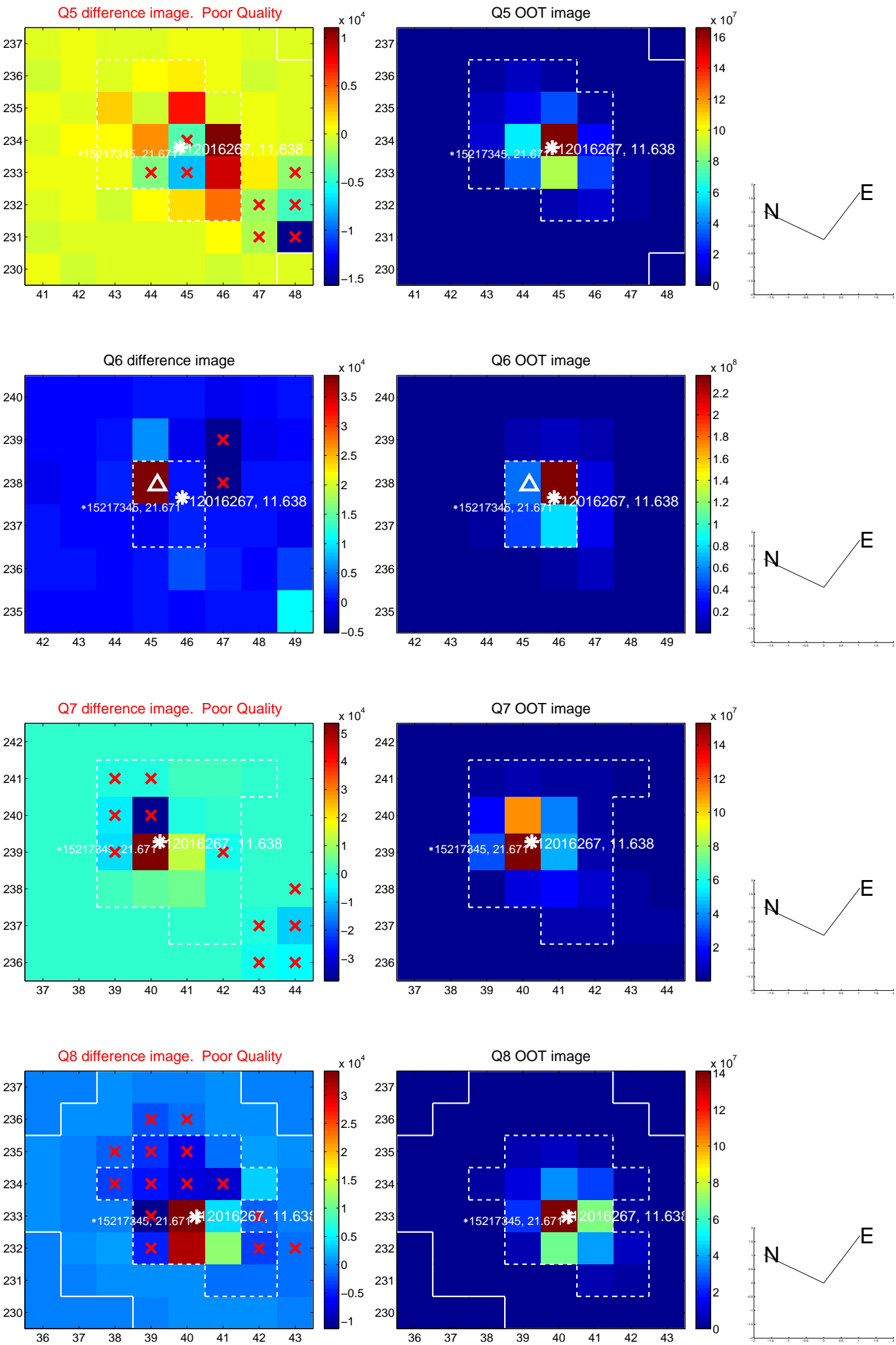


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

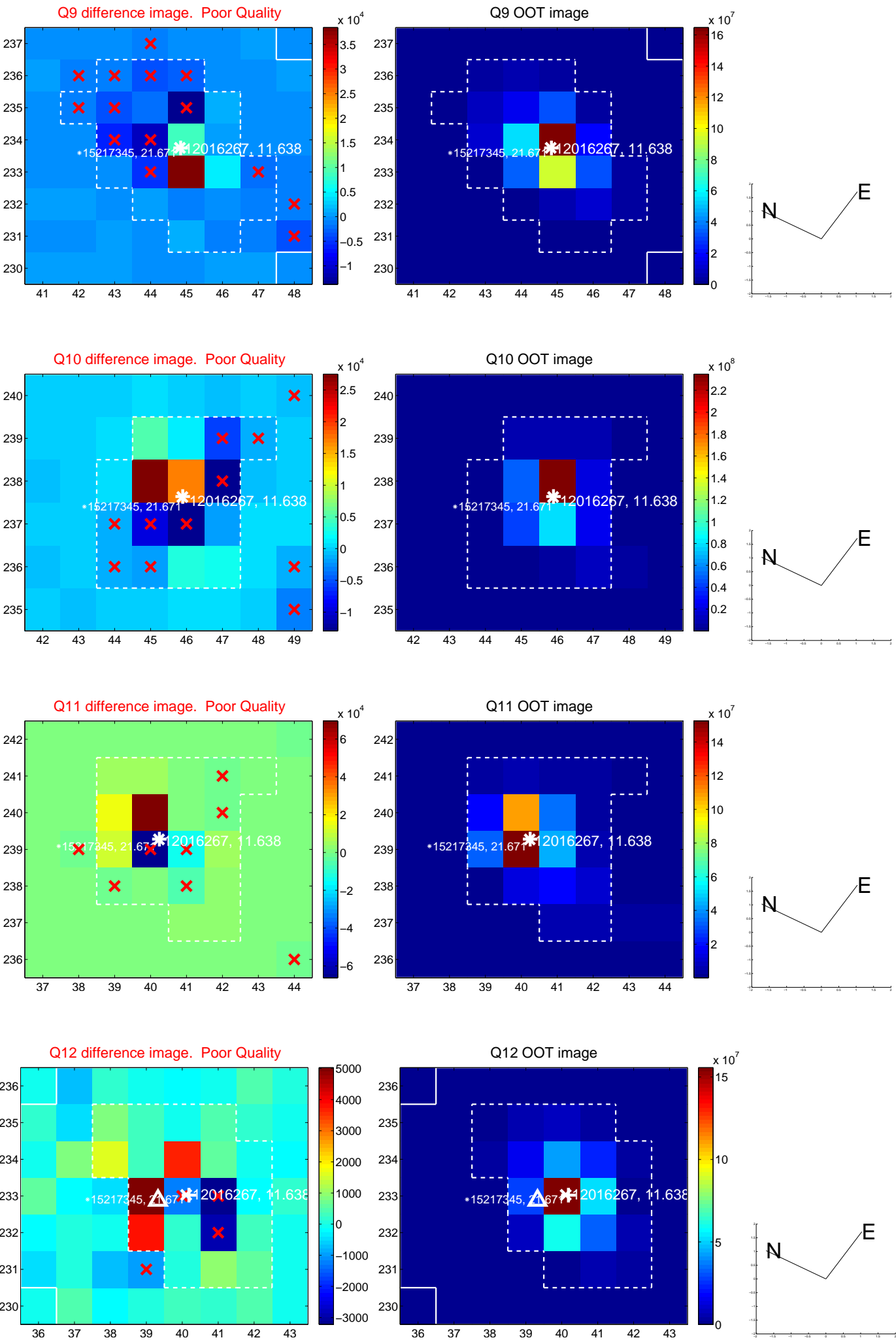
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



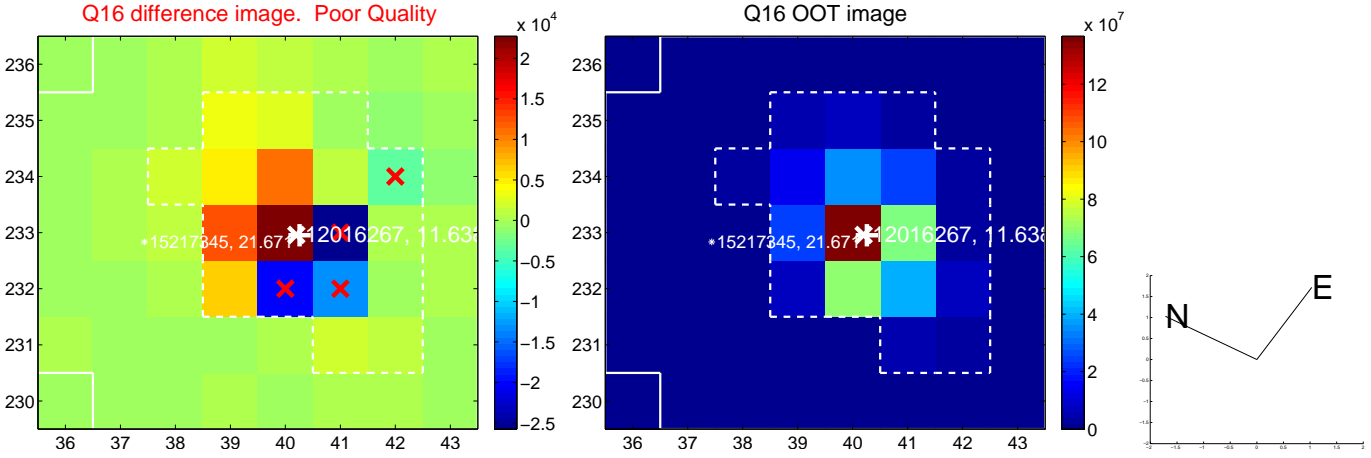
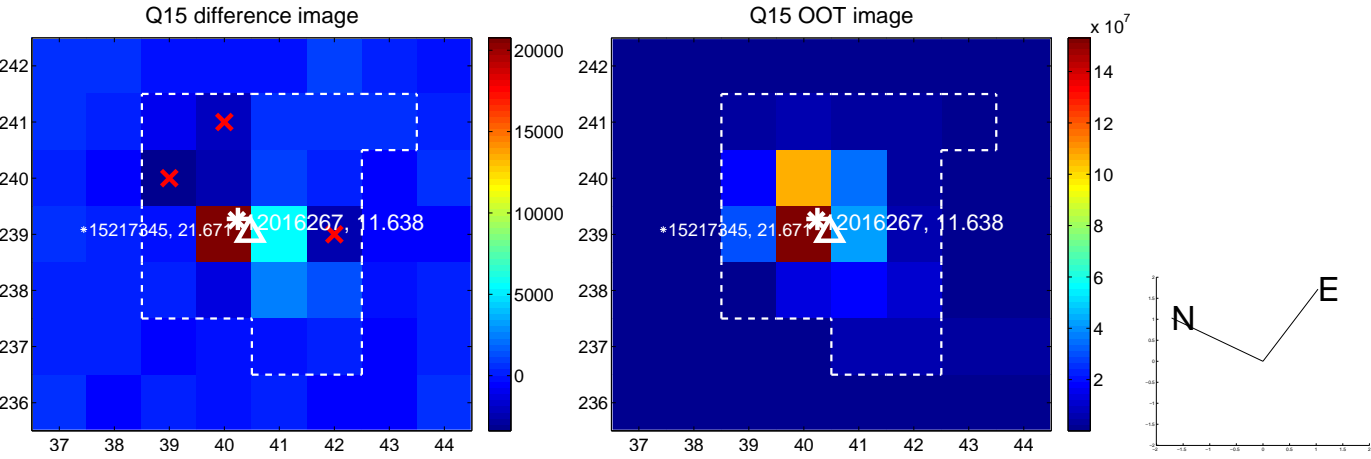
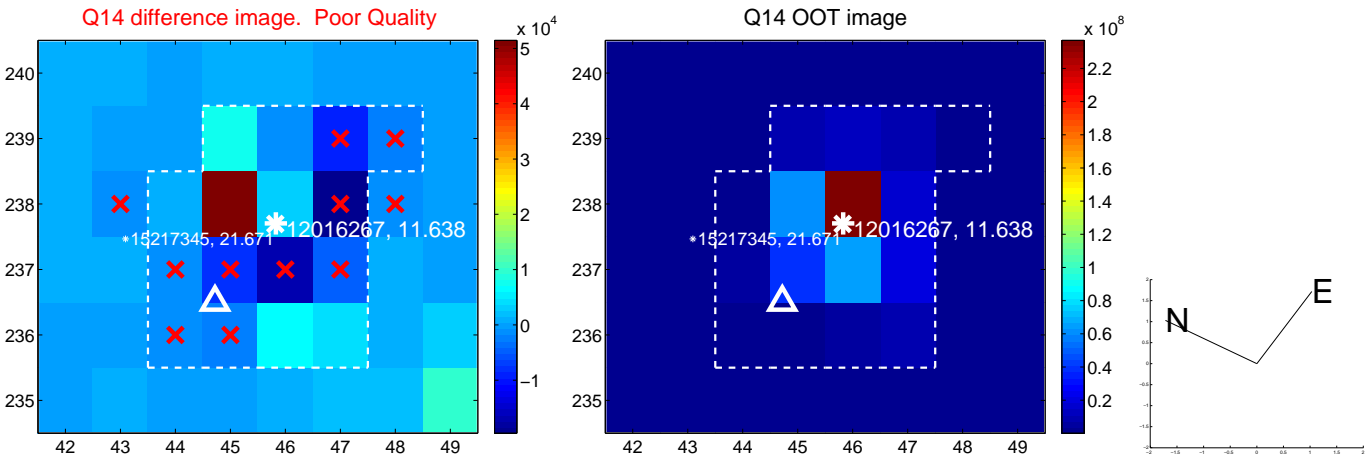
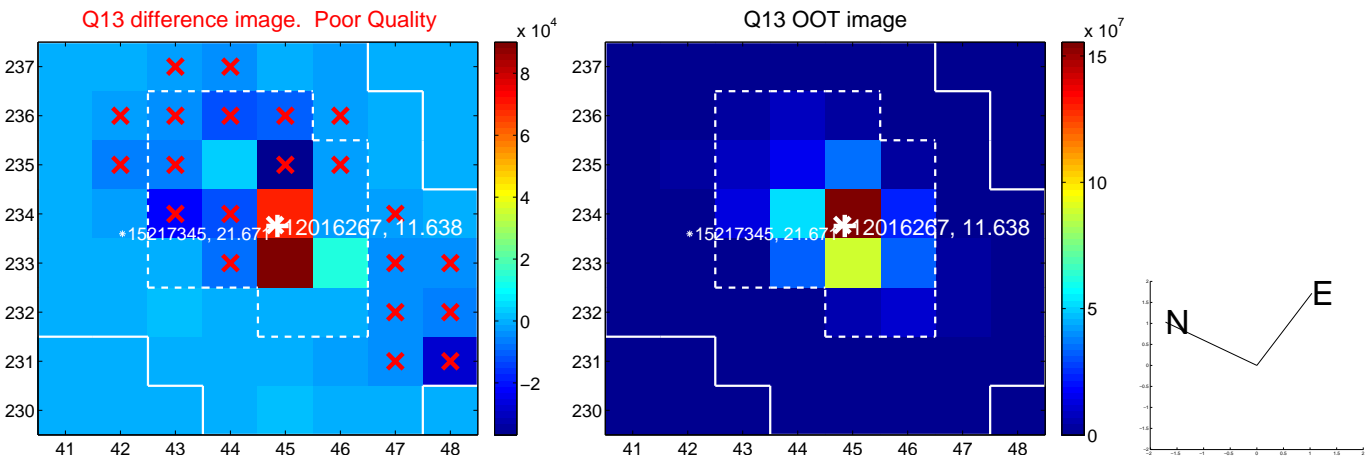
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



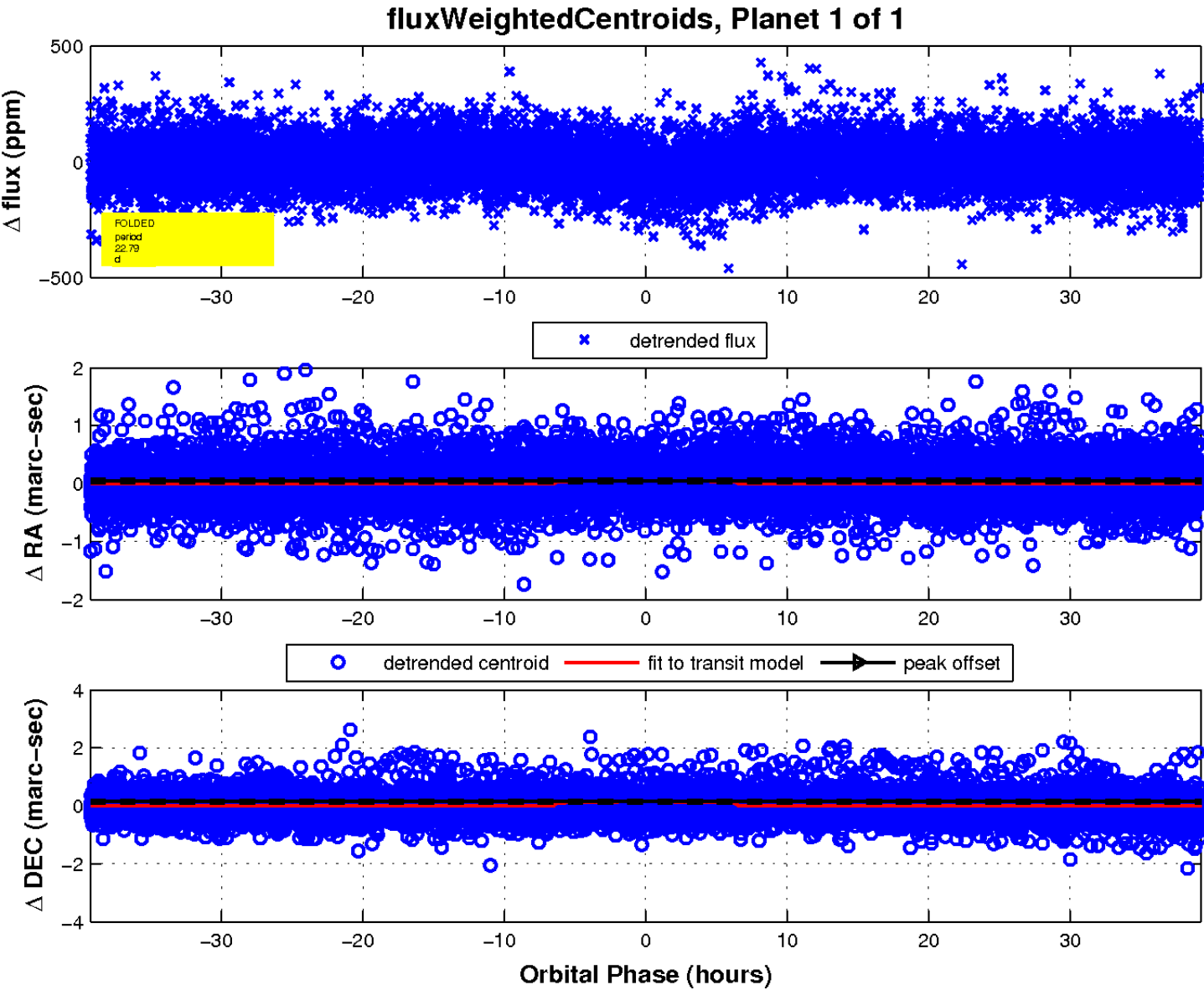
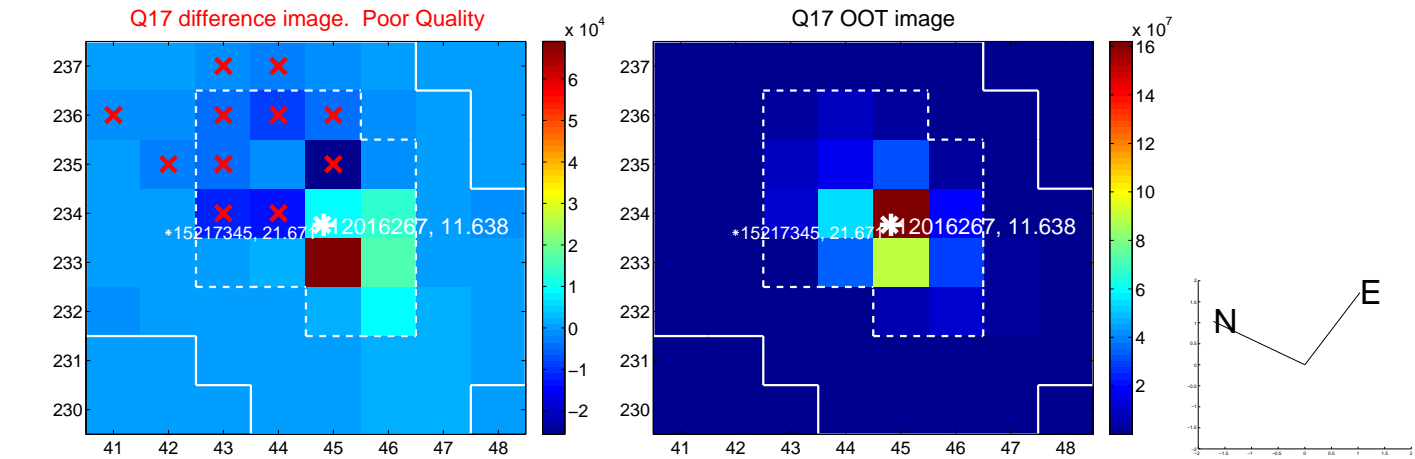
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UKIRT Image

Declination

