

KIC 004376644

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})
004376644-01	OBS	0397.01	27.677679	146.118982	11600.5	2.183	509.3	503.5	0.97	6075	15.96	34.60

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004376644-01	OBS	FP	0.00	0	1	0	0	DEEP_V_SHAPED—CENT_KIC_POS

Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

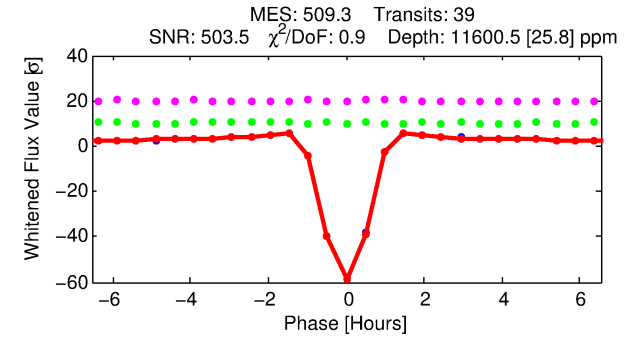
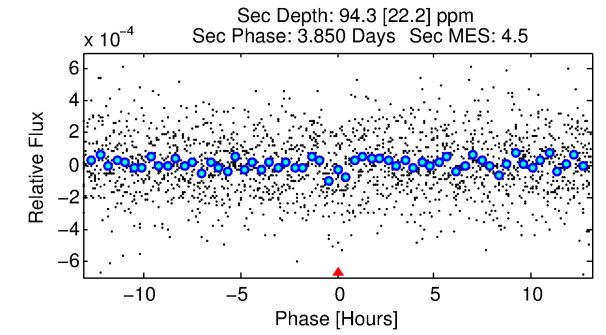
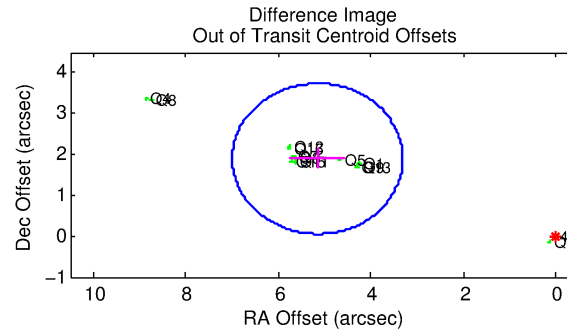
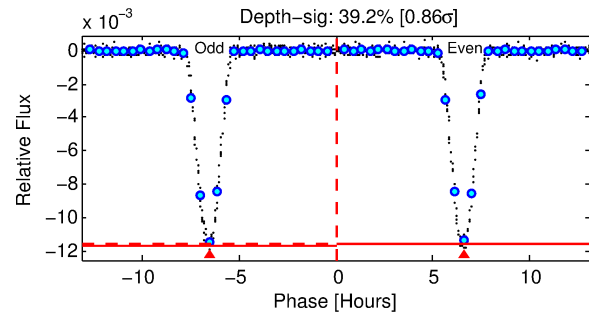
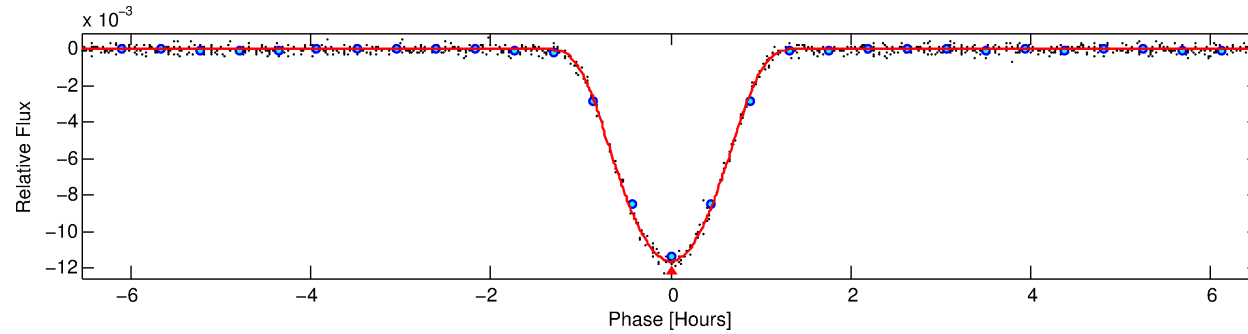
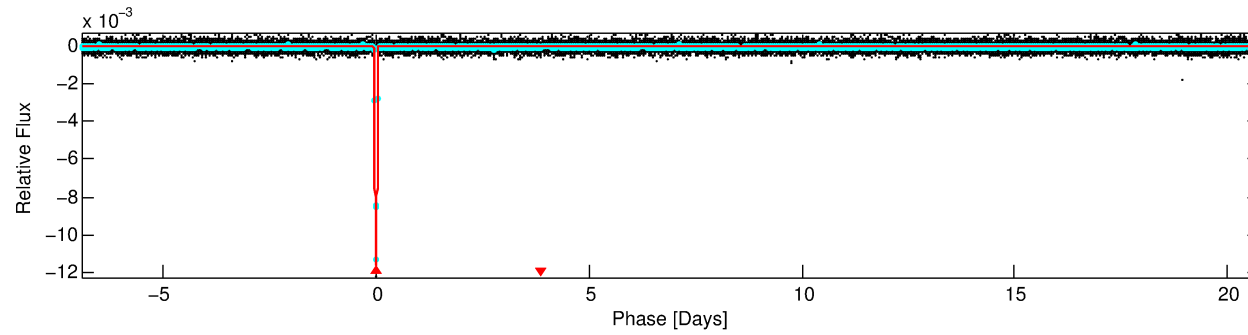
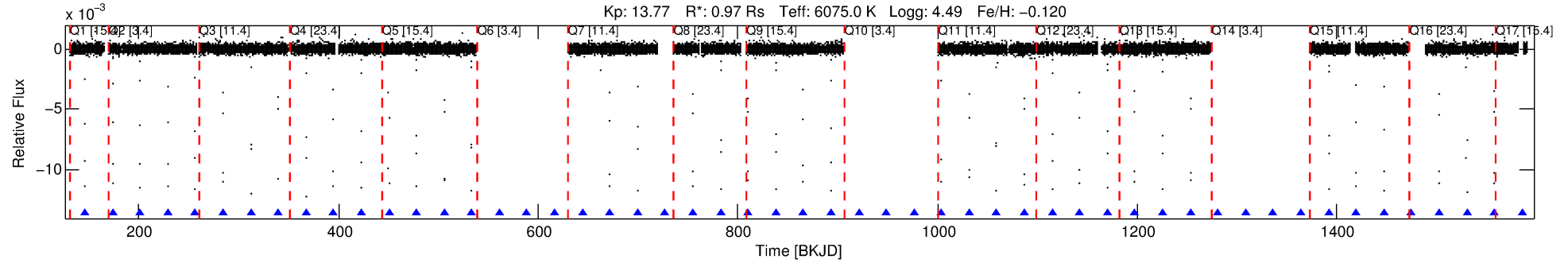
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004376644-01

No Significant Match Found

DV One-Page Summary

KIC: 4376644 Candidate: 1 of 1 Period: 27.678 d
KOI: K00397.01 Corr: 0.997



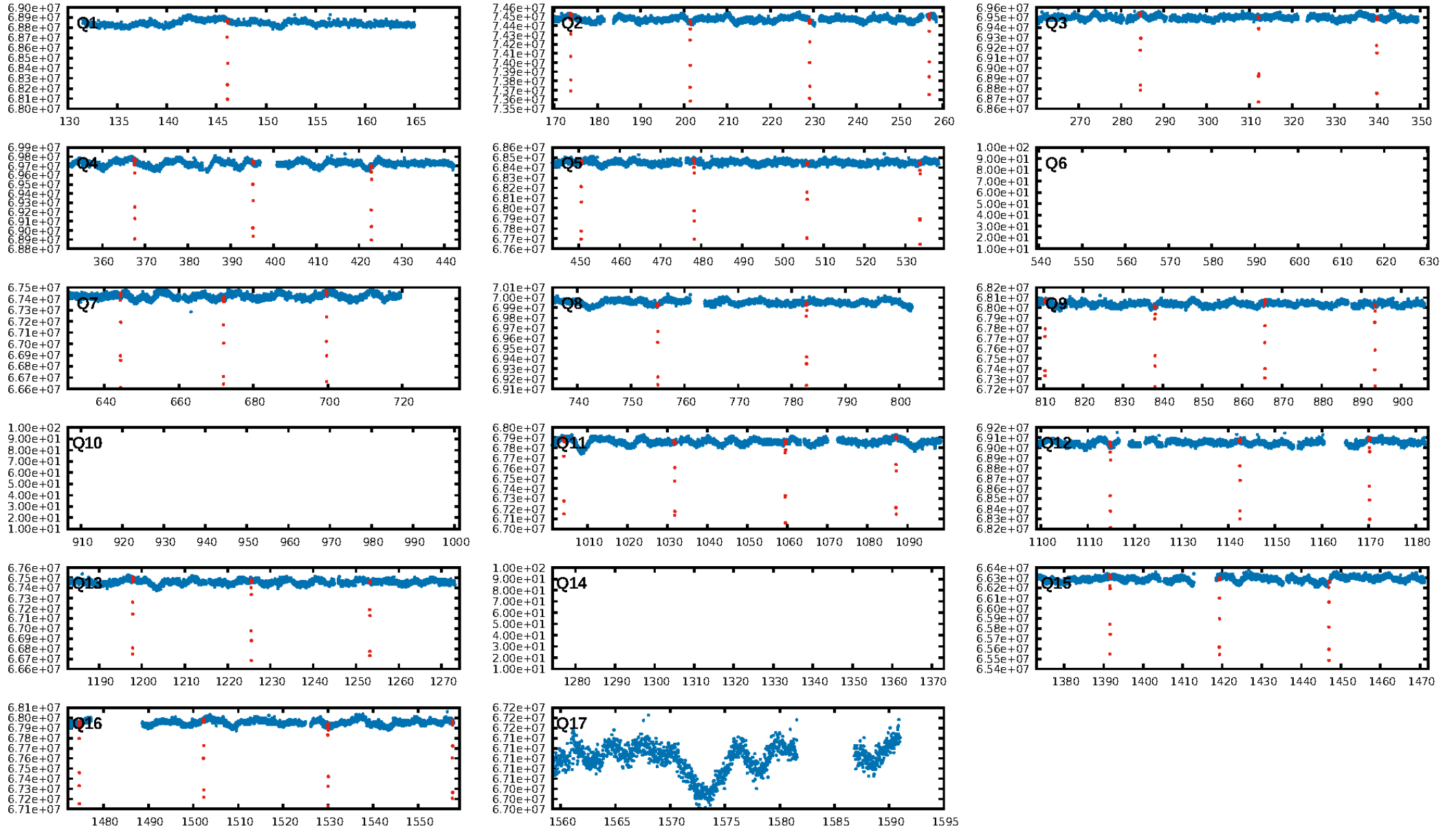
DV Fit Results:

Period = 27.67768 [0.00000] d
Epoch = 146.1190 [0.0001] BKJD
Rp/R* = 0.1509 [0.0120]
a/R* = 61.56 [1.07]
b = 0.96 [0.02]
Seff = 34.60 [14.43]
Teq = 618 [64] K
Rp = 15.96 [5.34] Re
a = 0.1820 [0.0497] AU
Ag = 6.74 [3.29] [1.75 σ]
Teffp = 1541 [121] K [6.75 σ]

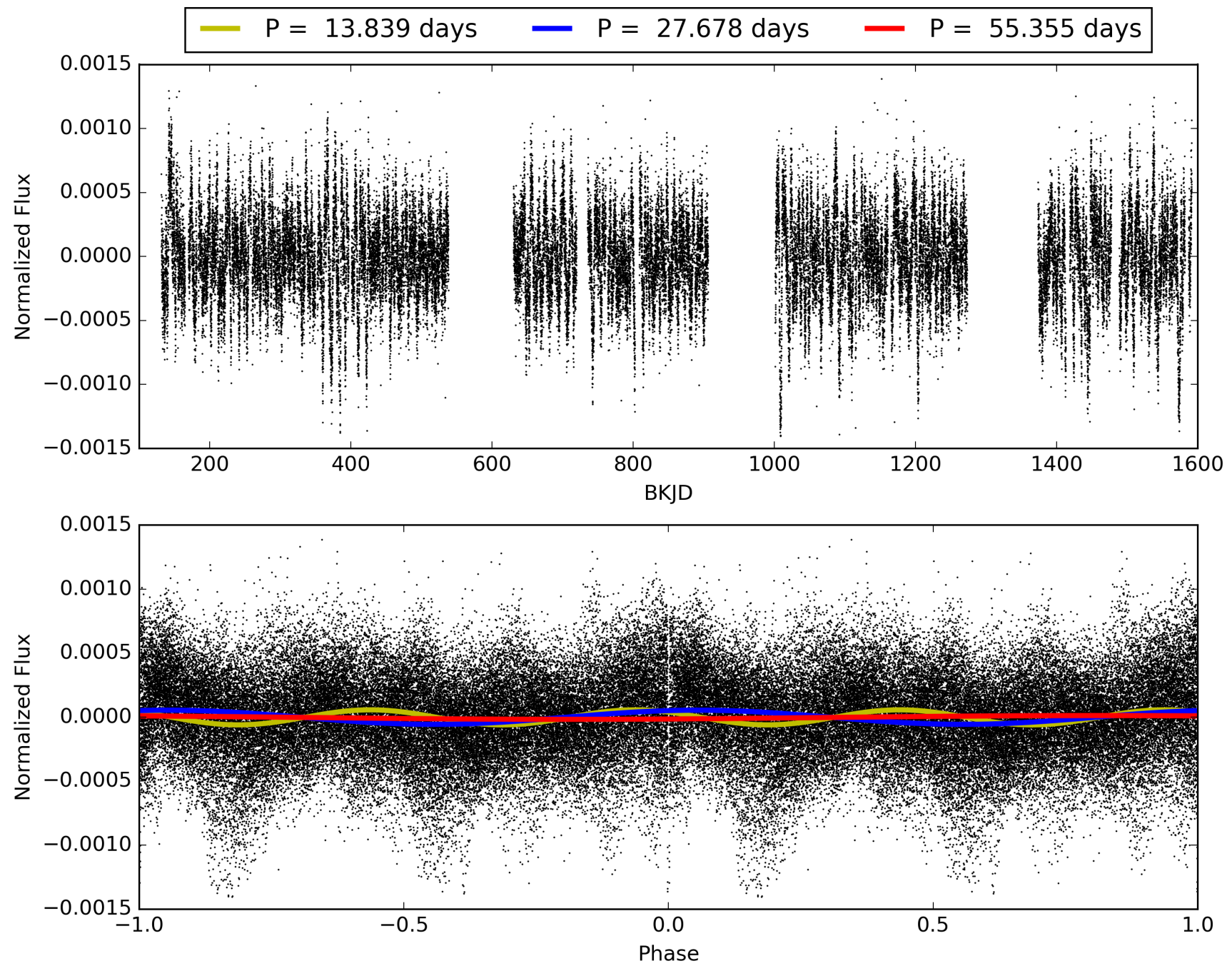
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 2.3%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [38/38]
GhostDiagnostic-chr: 4.494
Centroid-sig: 0.0%
Centroid-so: 0.676 arcsec [30.35 σ]
OotOffset-rm: 5.491 arcsec [8.94 σ]
KicOffset-rm: 0.144 arcsec [2.02 σ]
OotOffset-st: 1/4/4/4 [13]
KicOffset-st: 1/4/4/4 [13]
DiffImageQuality-fgm: 1.00 [13/13]
DiffImageOverlap-fno: 1.00 [13/13]

TCE 004376644-01, PDC Light Curves

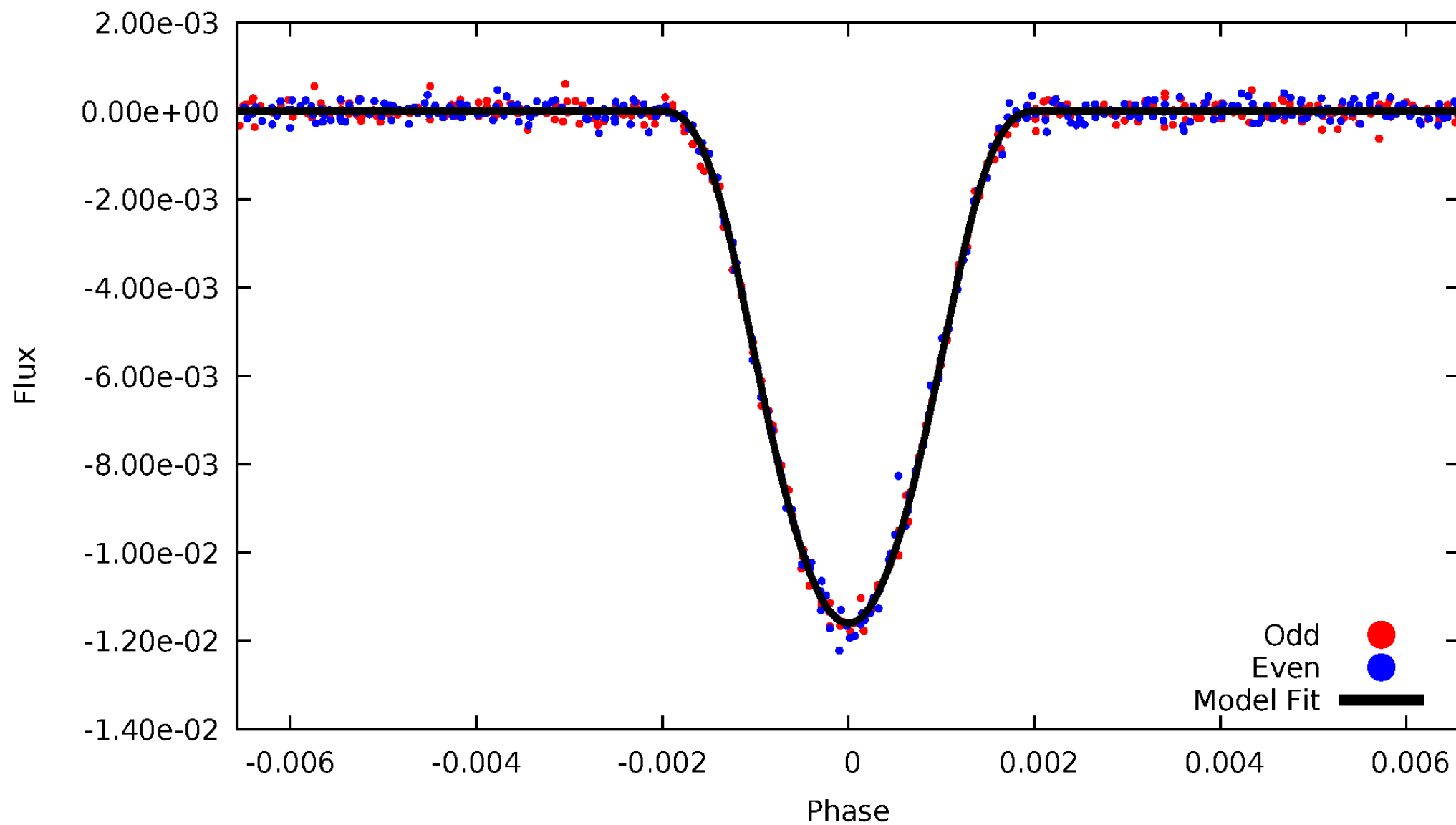


TCE 004376644-01



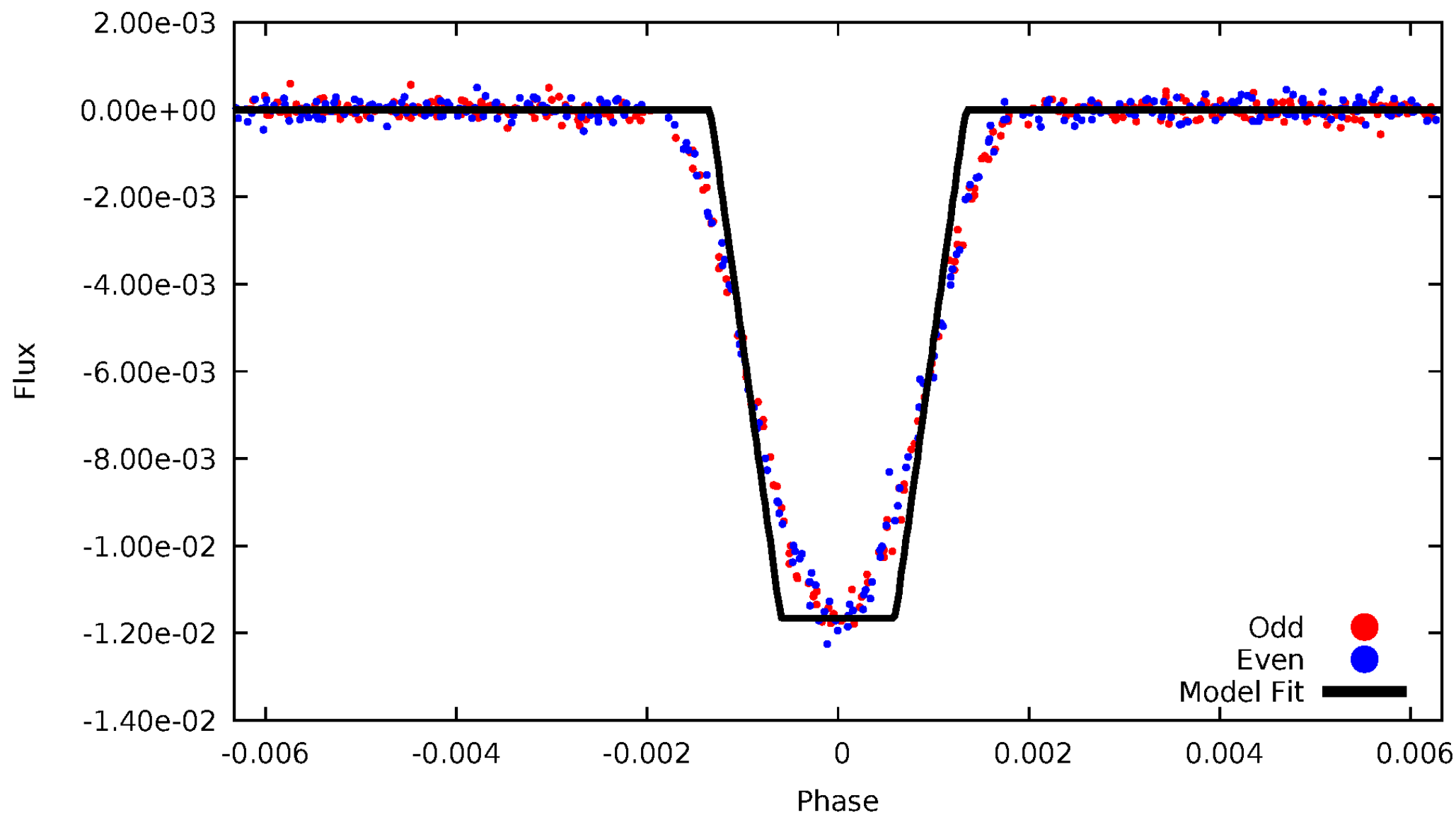
DV Odd/Even

TCE 004376644-01

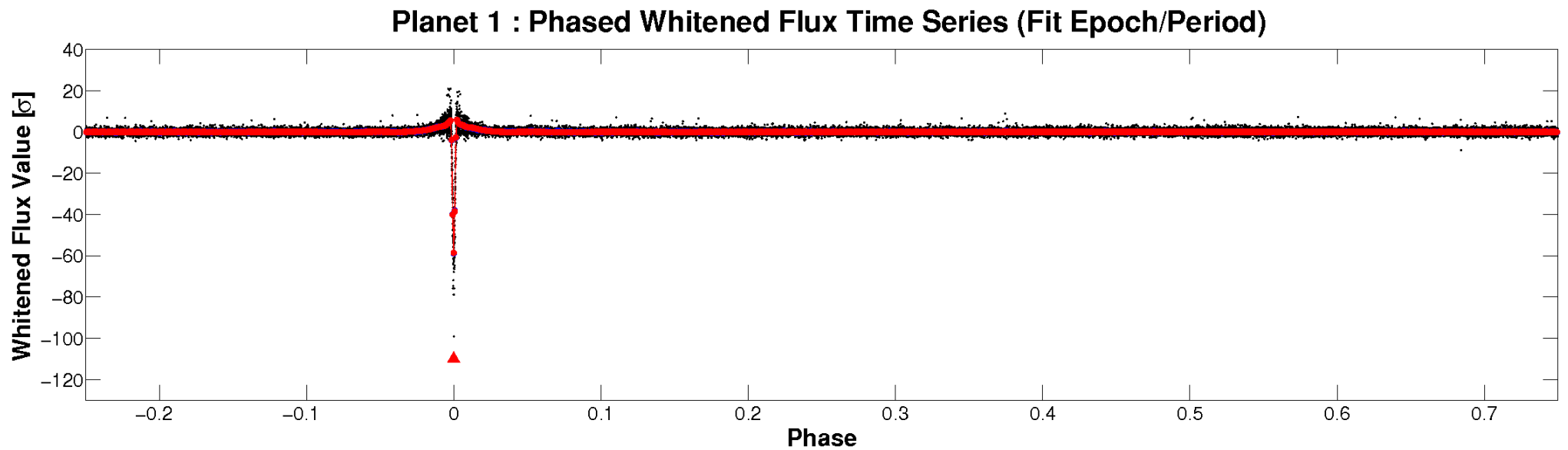
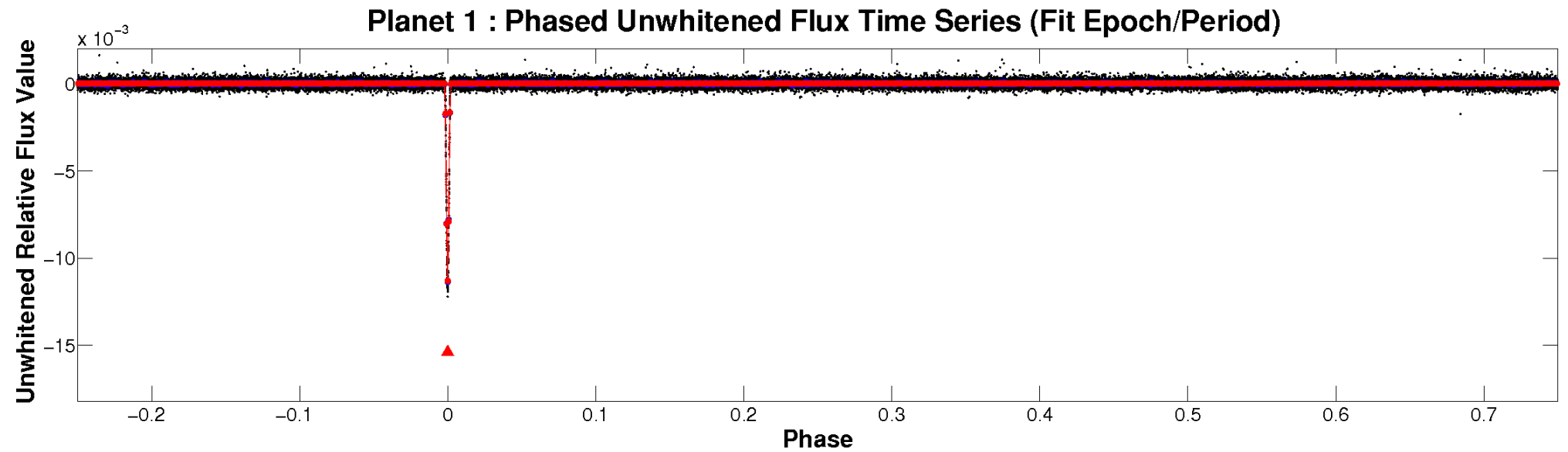


ALT Odd/Even

TCE 004376644-01

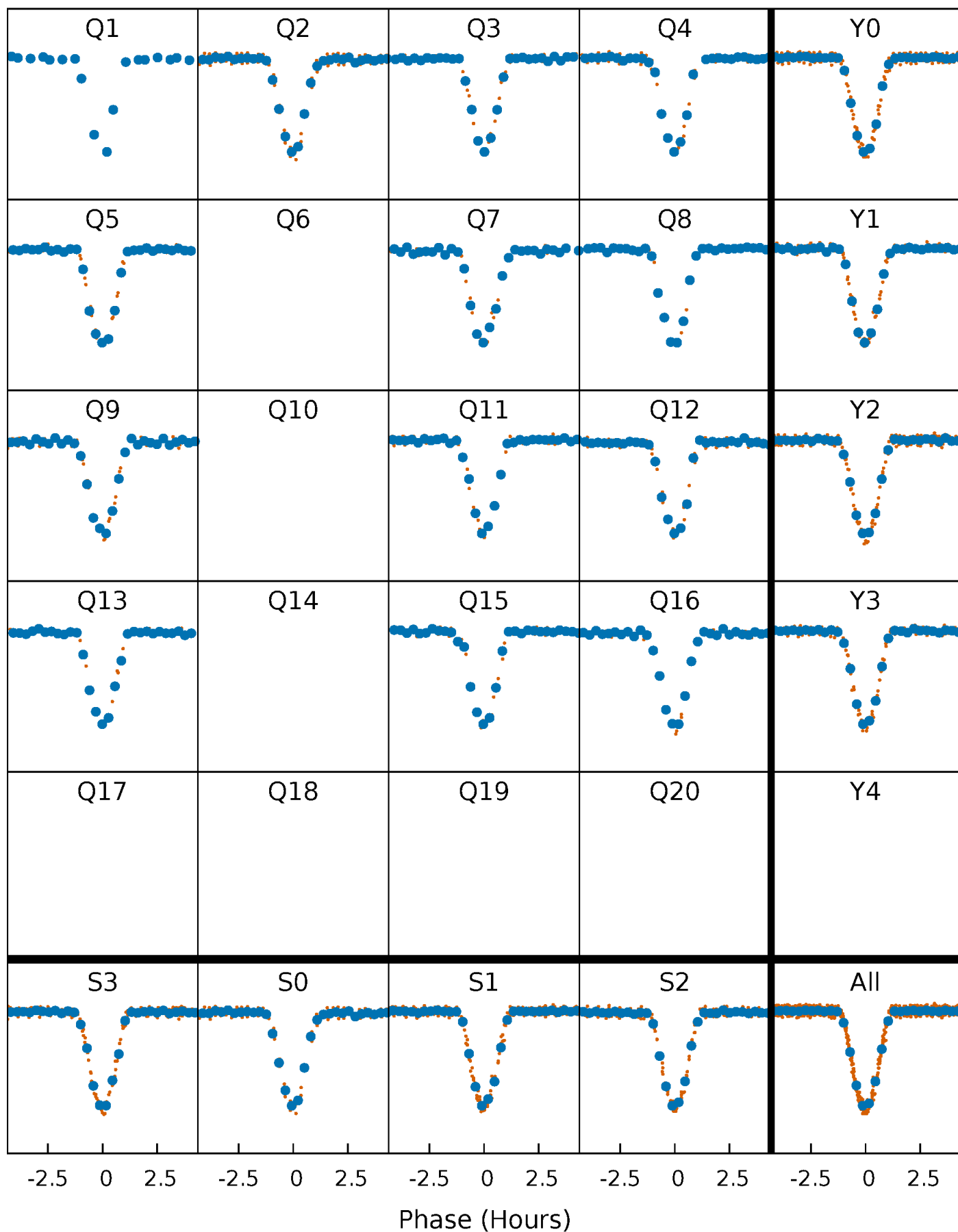


Non-Whitened Vs. Whitened Light Curve



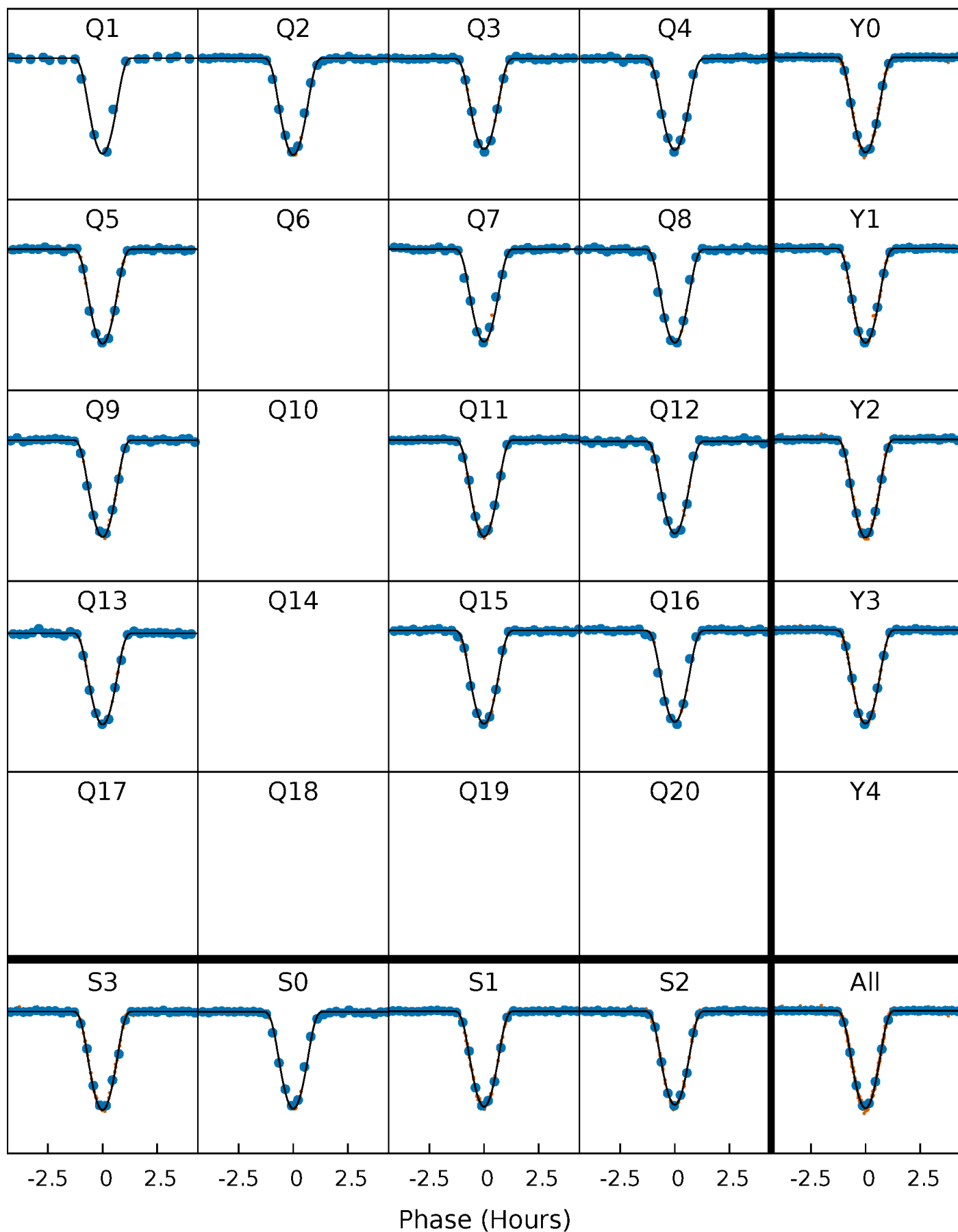
PDC Quarter-Phased Transit Curves

TCE 004376644-01 P= 27.677679 Days $T_0=146.118981$ (BKJD)



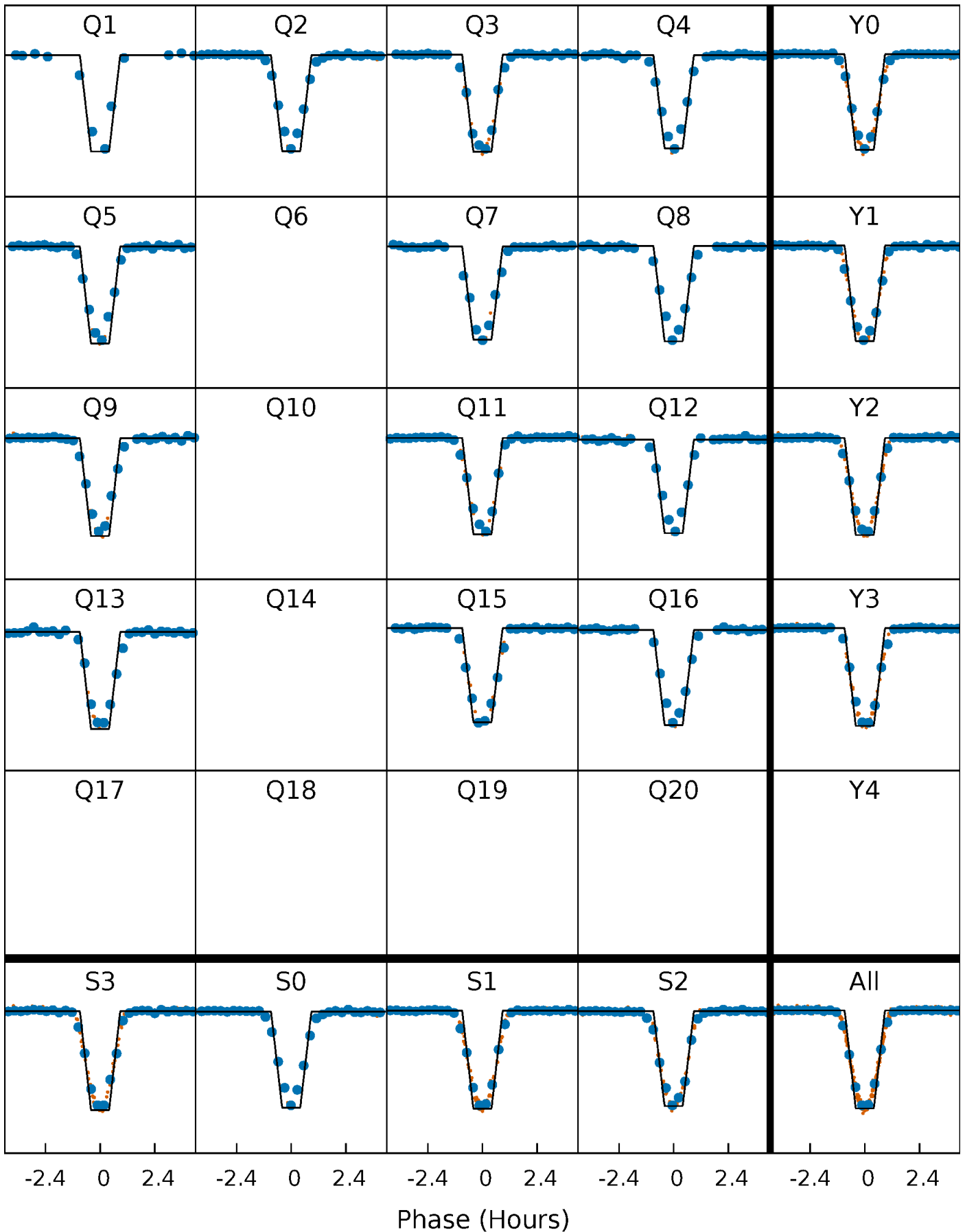
DV Quarter-Phased Transit Curves

TCE 004376644-01 P= 27.677679 Days $T_0=146.118981$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

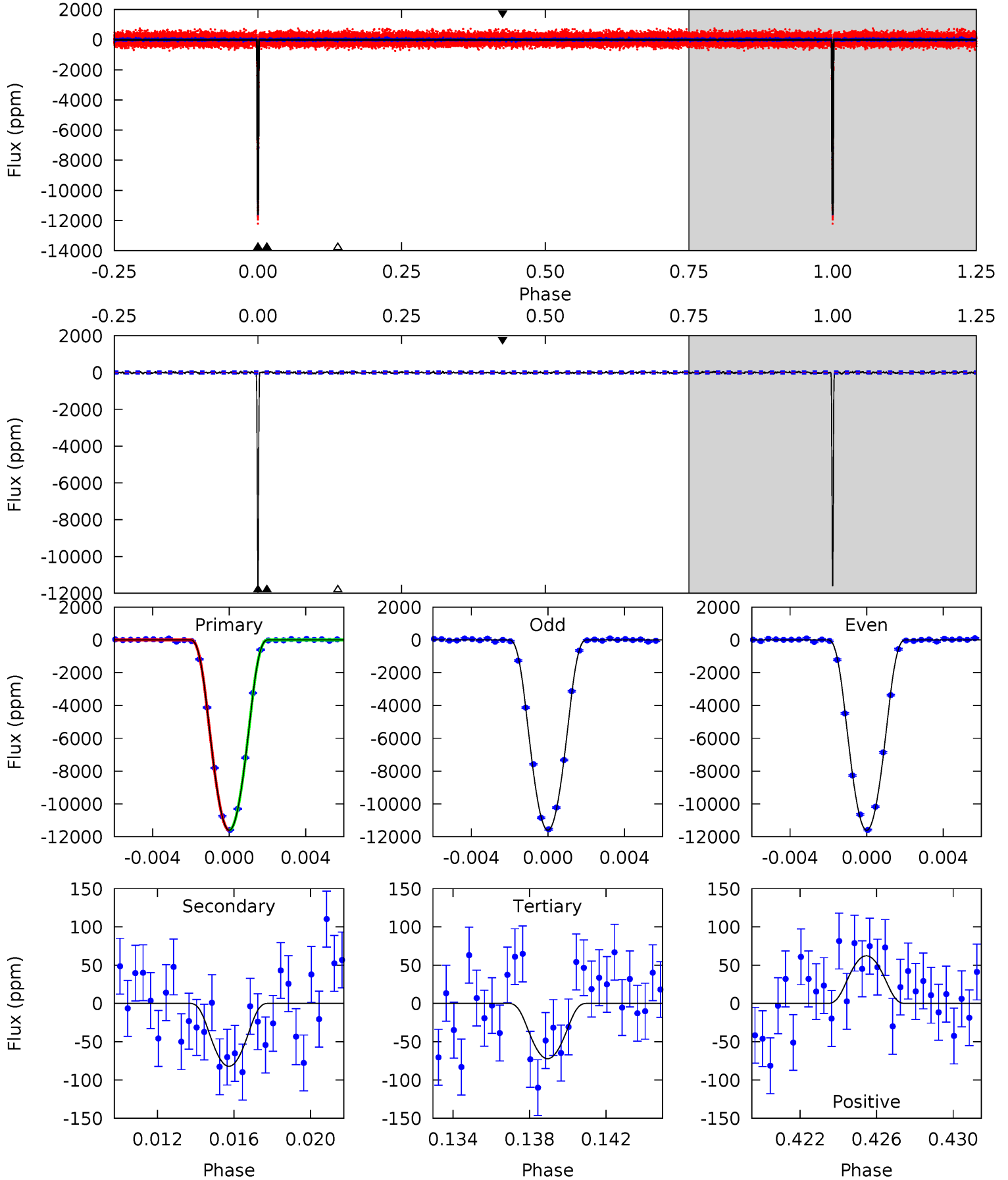
TCE 004376644-01 P= 27.677647 Days $T_0=146.119675$ (BKJD)



DV Model-Shift Uniqueness Test

004376644-01, P = 27.677679 Days, E = 118.441302 Days

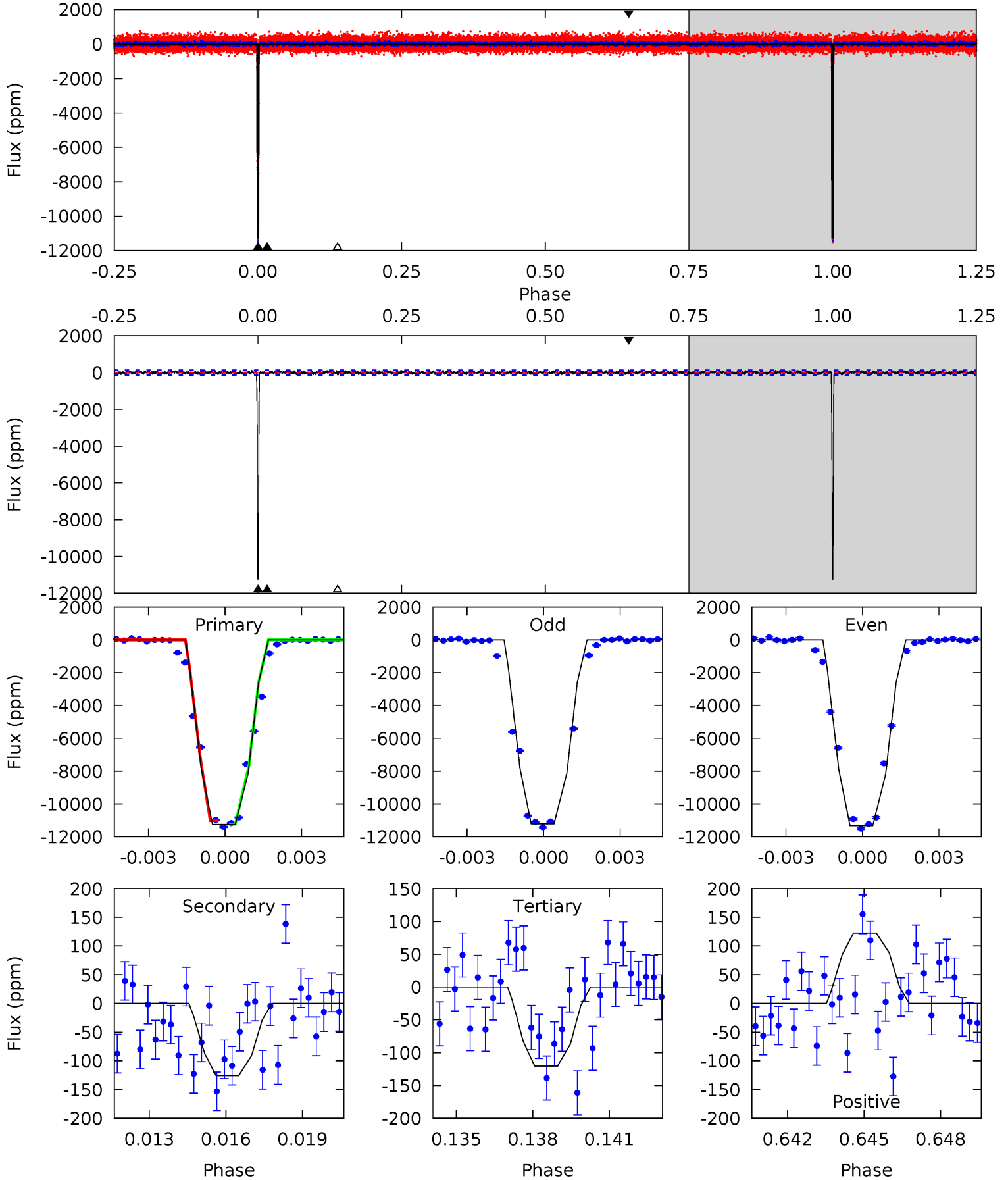
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
908.5	6.43	5.65	4.87	5.20	2.88	1.60	902.9	903.7	0.78	1.56	0.22	1.00	0.01	0.31



Alt Model-Shift Uniqueness Test

004376644-01, P = 27.677647 Days, E = 118.442028 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
459.0	5.12	4.91	5.00	5.28	3.01	1.32	454.1	454.0	0.21	0.12	1.87	1.00	0.01	0



Stellar Parameters For KIC 004376644

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6075^{+162}_{-198}	$4.486^{+0.054}_{-0.216}$	$-0.120^{+0.250}_{-0.350}$	$0.969^{+0.315}_{-0.105}$	$1.048^{+0.139}_{-0.139}$	$1.622^{+0.360}_{-0.899}$
	+3%/-3%	+1%/-5%	+208%/-292%	+33%/-11%	+13%/-13%	+22%/-55%
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 004376644-01 / KOI 0397.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-82 ± 13	$16.58^{+2.78}_{-1.91}$	880^{+64}_{-41}	2363^{+75}_{-71}	$5.246^{+1.863}_{-1.431}$
Alt.	-126 ± 25	$12.01^{+2.11}_{-1.69}$	883^{+67}_{-44}	2710^{+127}_{-105}	15^{+6}_{-5}

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 $A_{obs} \gg 1.0$

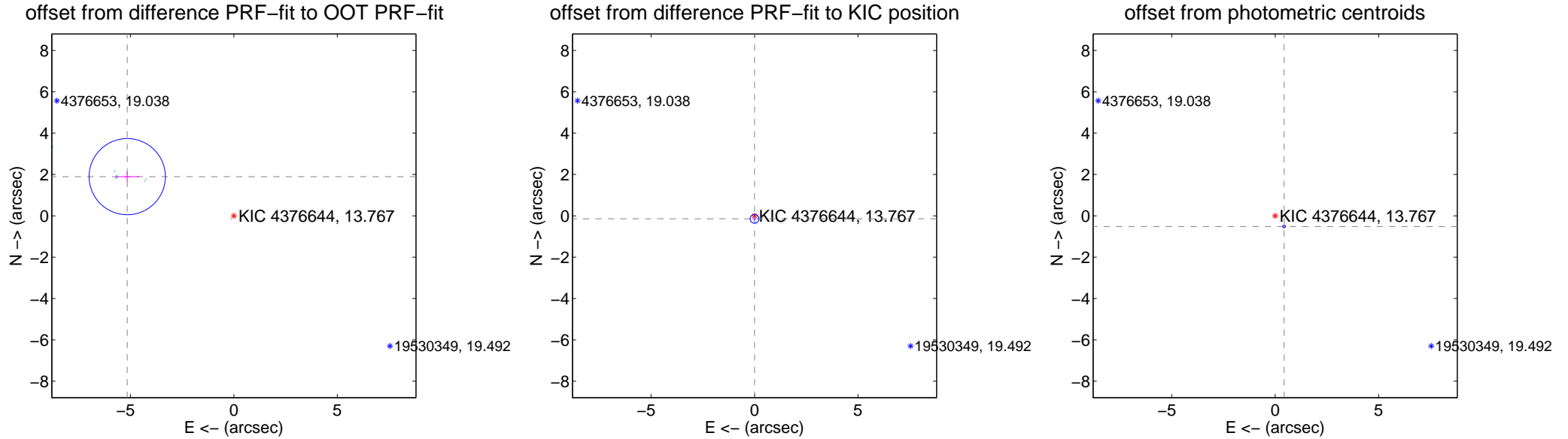
DV Centroid Data

Supplemental centroid analysis for 004376644-01. Kepler magnitude: 13.77. Transit SNR 503.53

There are 13 quarters with good PRF difference image offsets

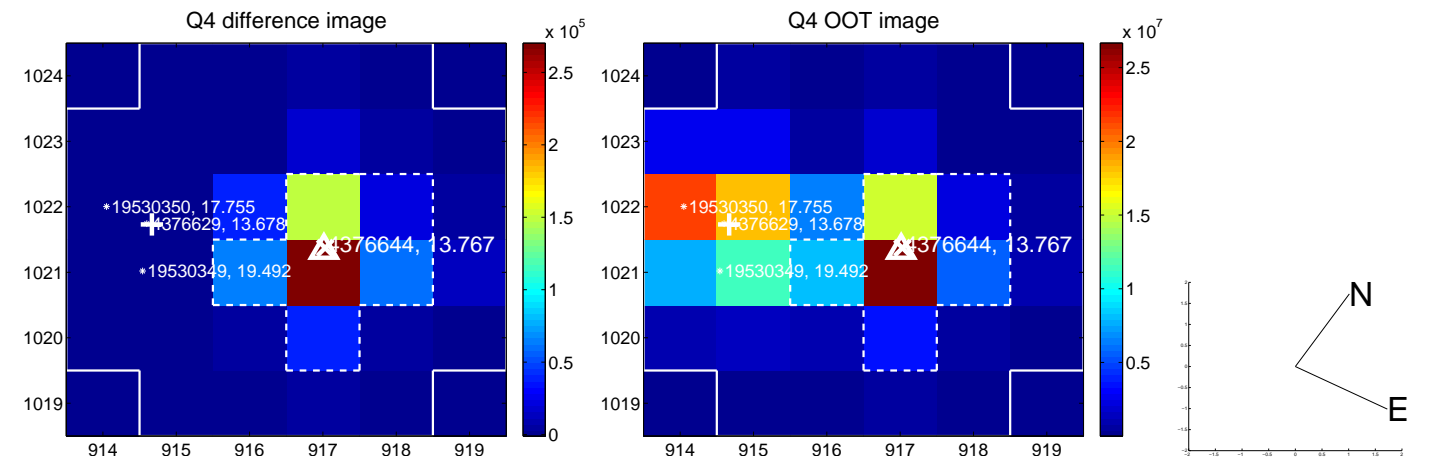
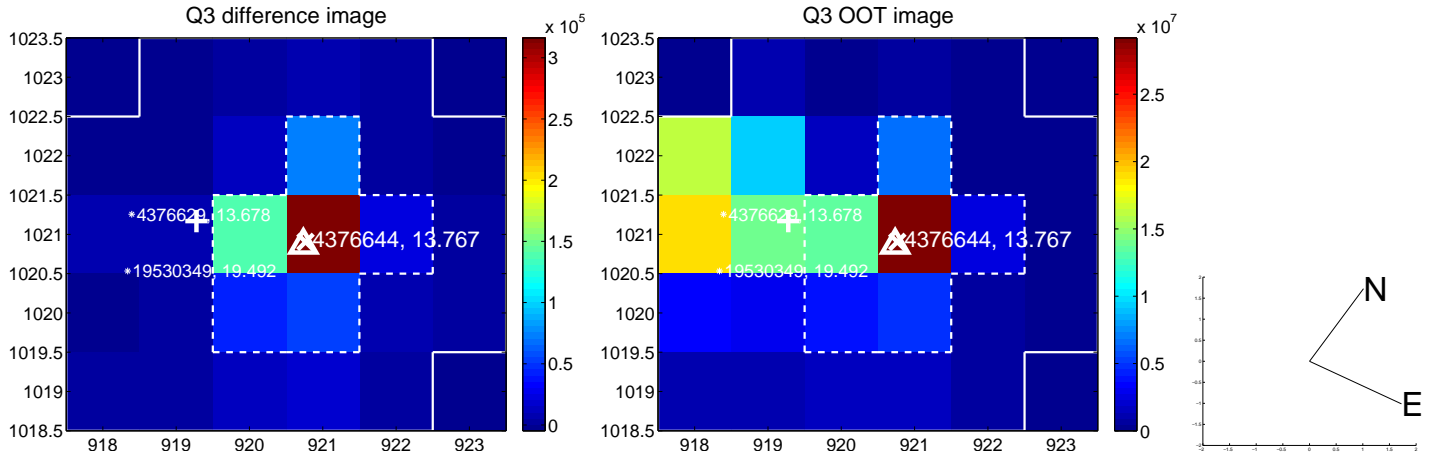
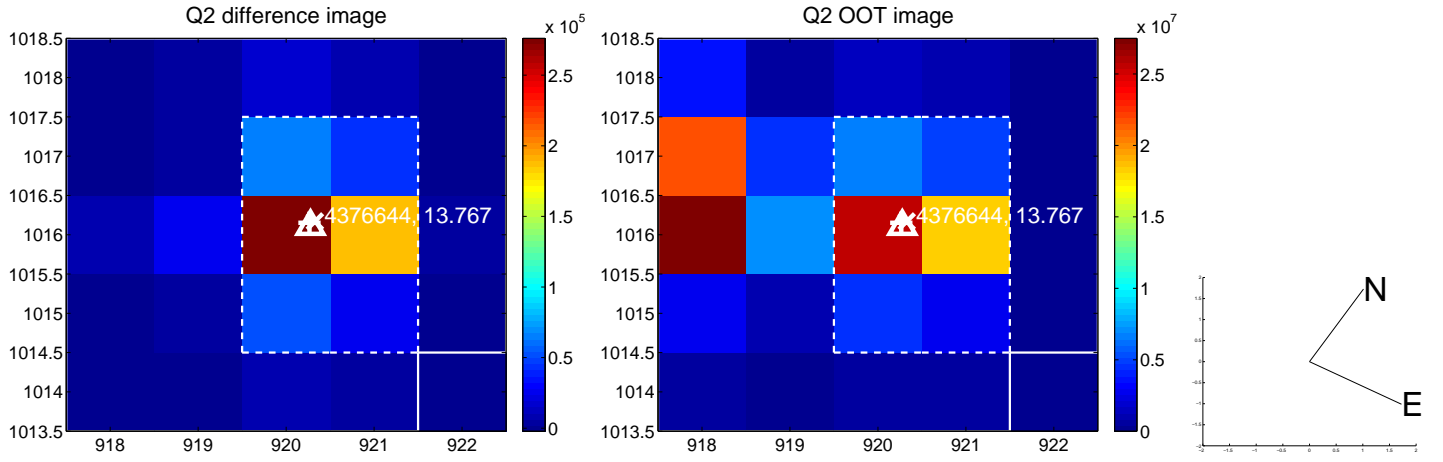
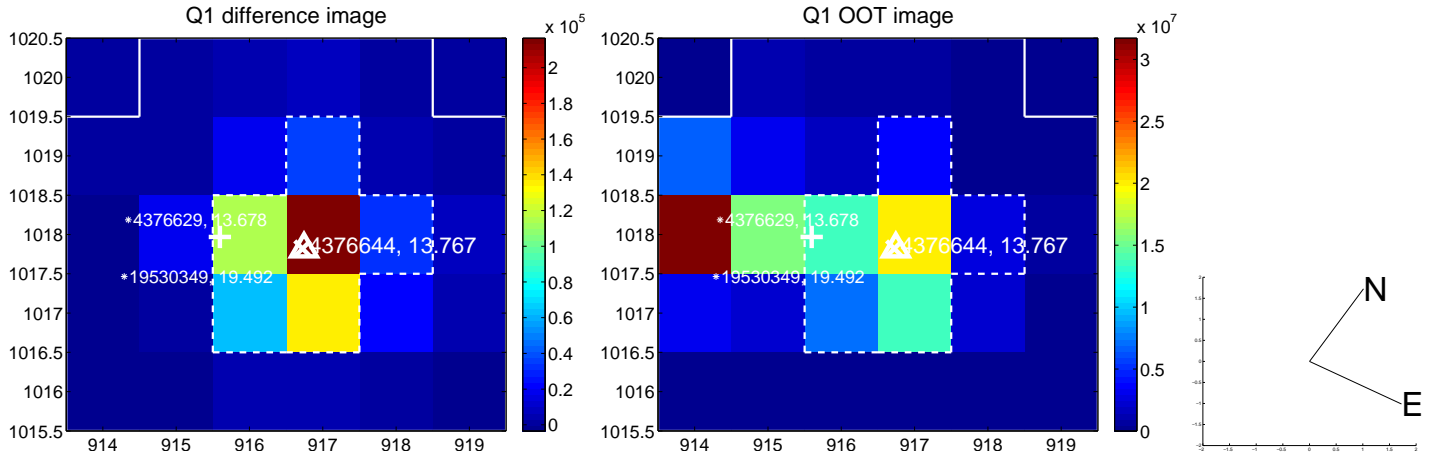
The OOT PRF centroid is offset from the target star catalog position by about 6.32 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	5.491 ± 0.614	8.94	5.154 ± 0.575	1.895 ± 0.229
PRF-fit source offset from KIC position	0.144 ± 0.071	2.02	-0.002 ± 0.069	-0.144 ± 0.071
photometric centroid source offset	0.68 ± 0.02	30.35	-0.43 ± 0.02	-0.52 ± 0.02

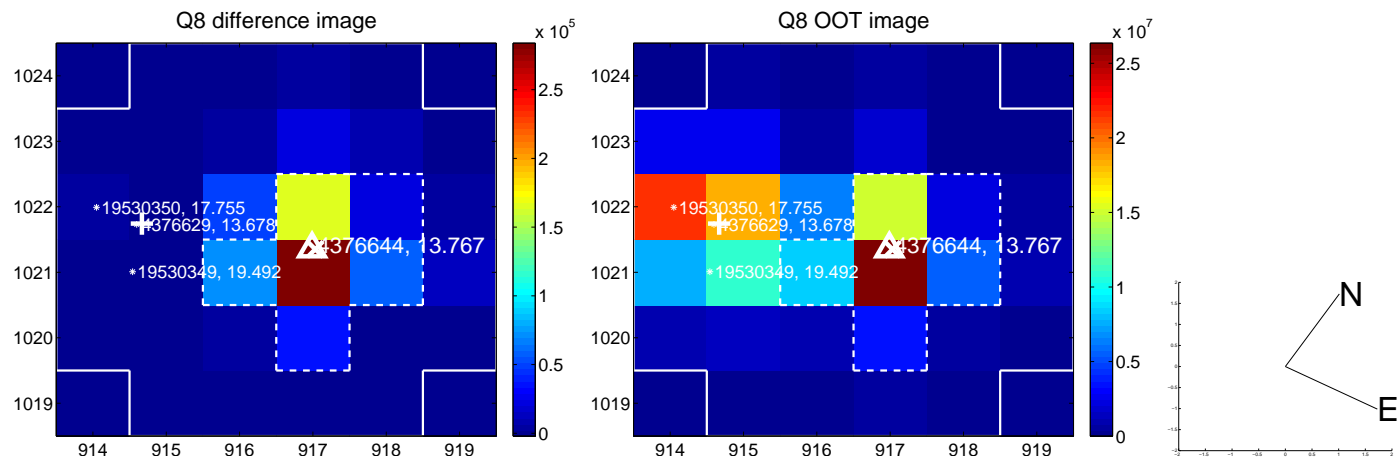
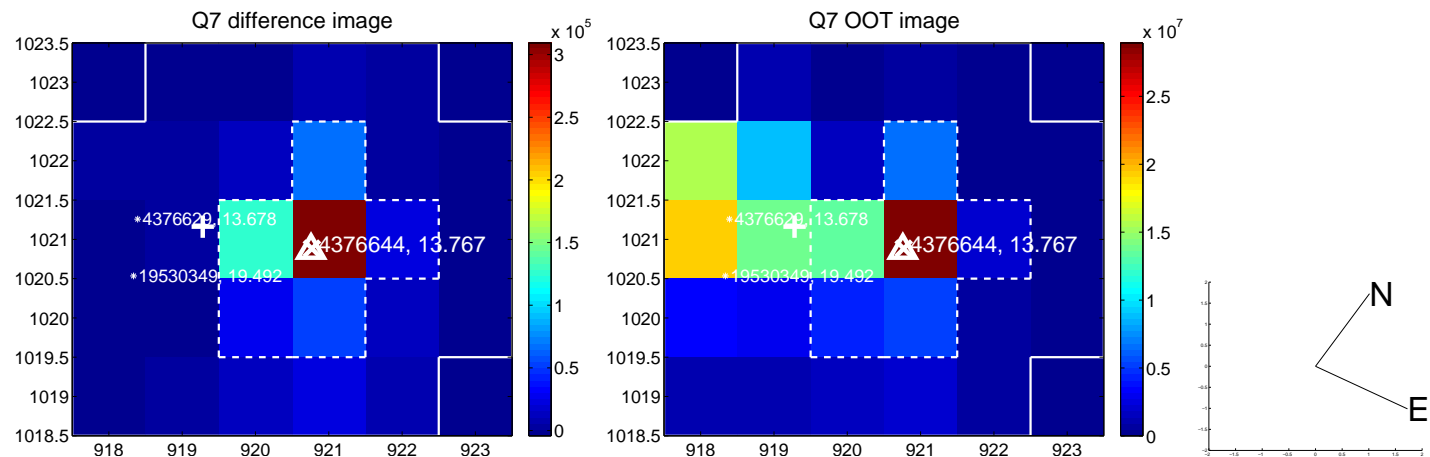
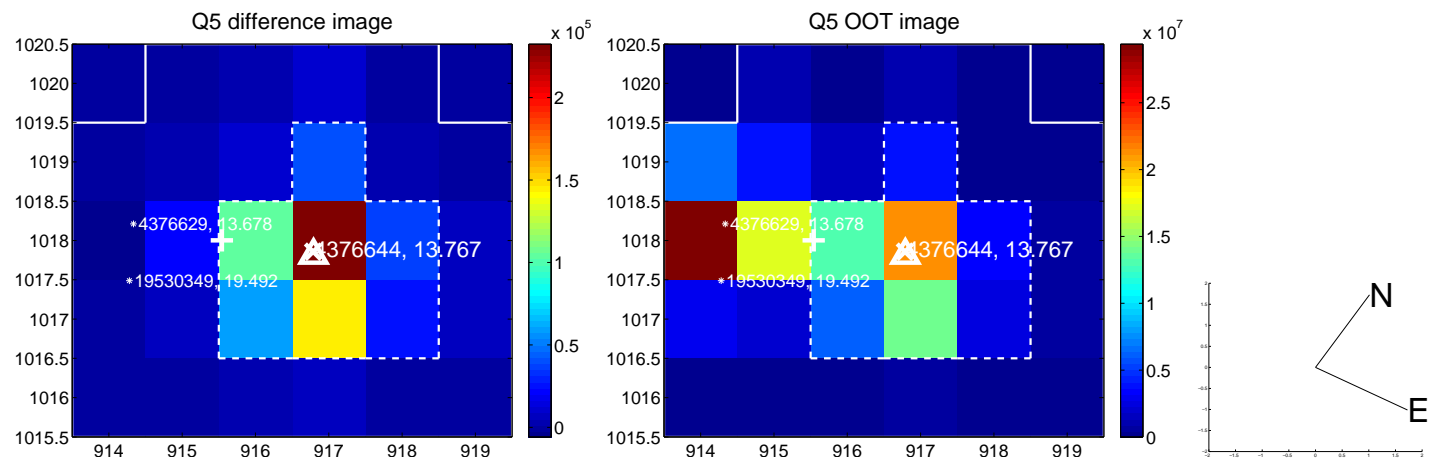


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

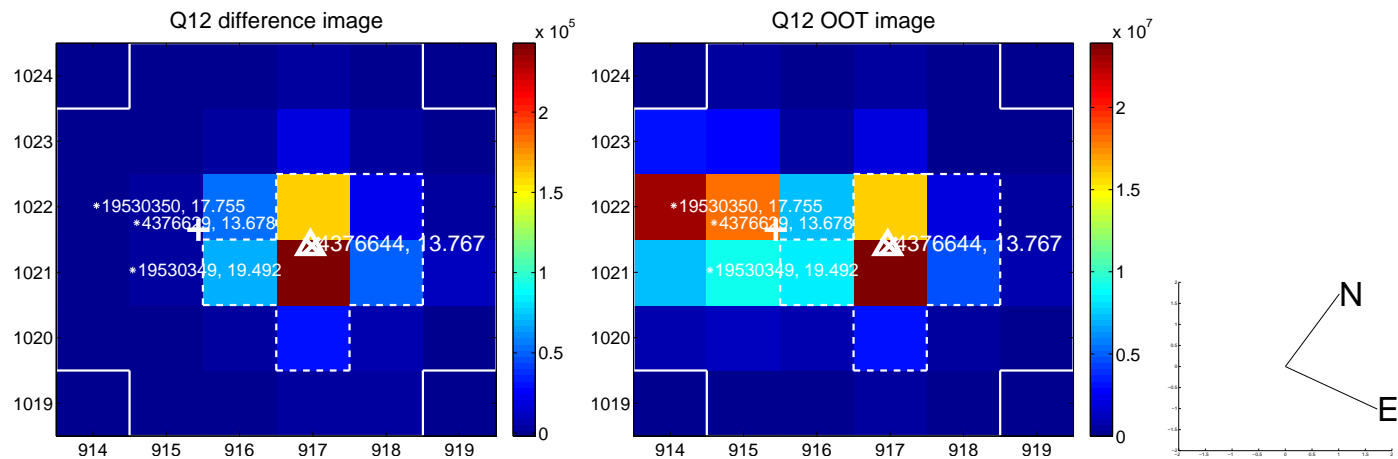
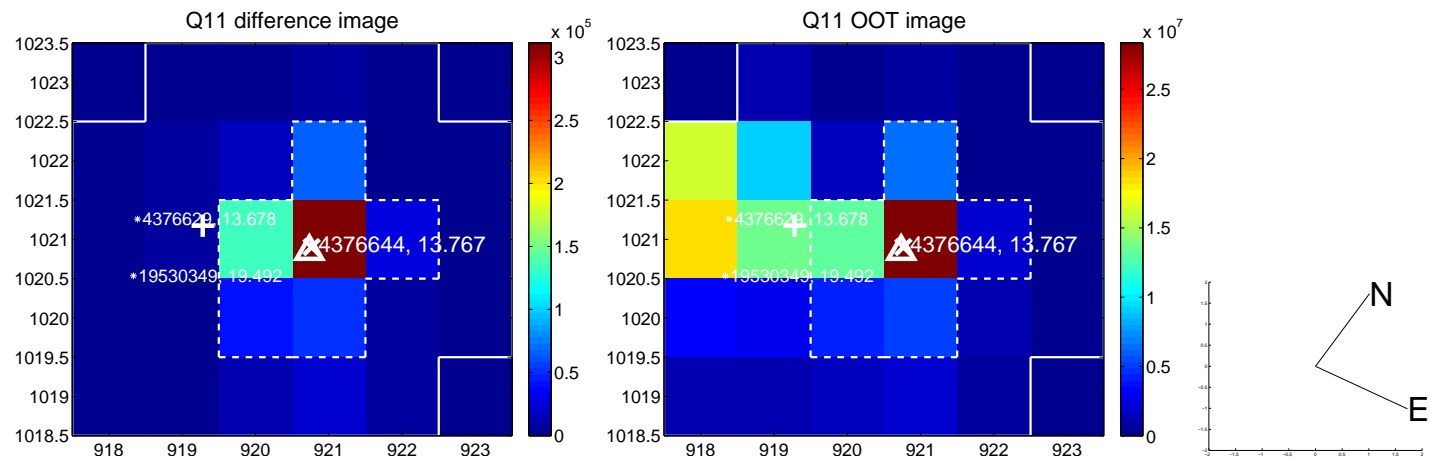
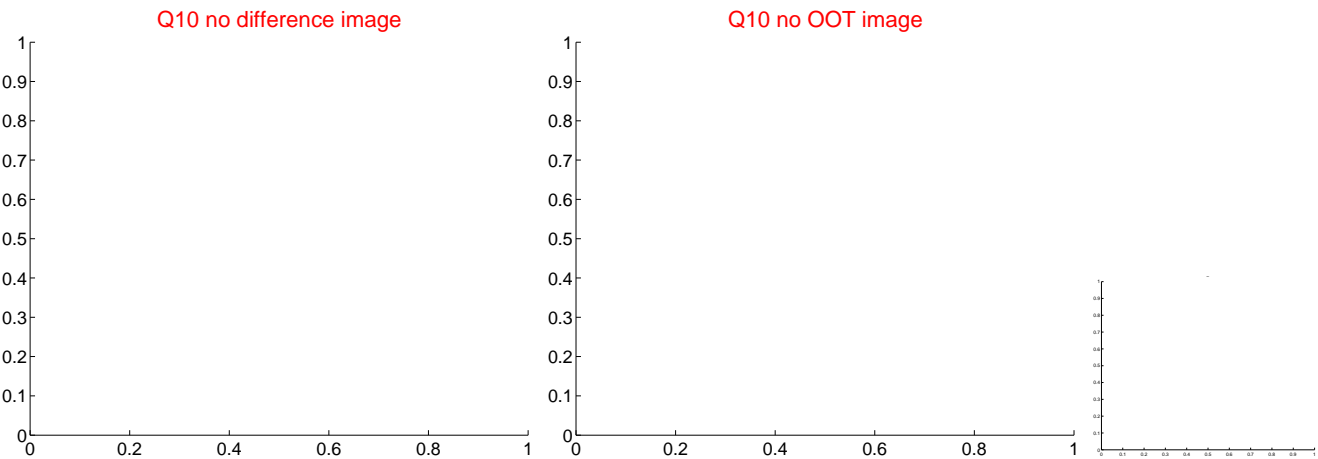
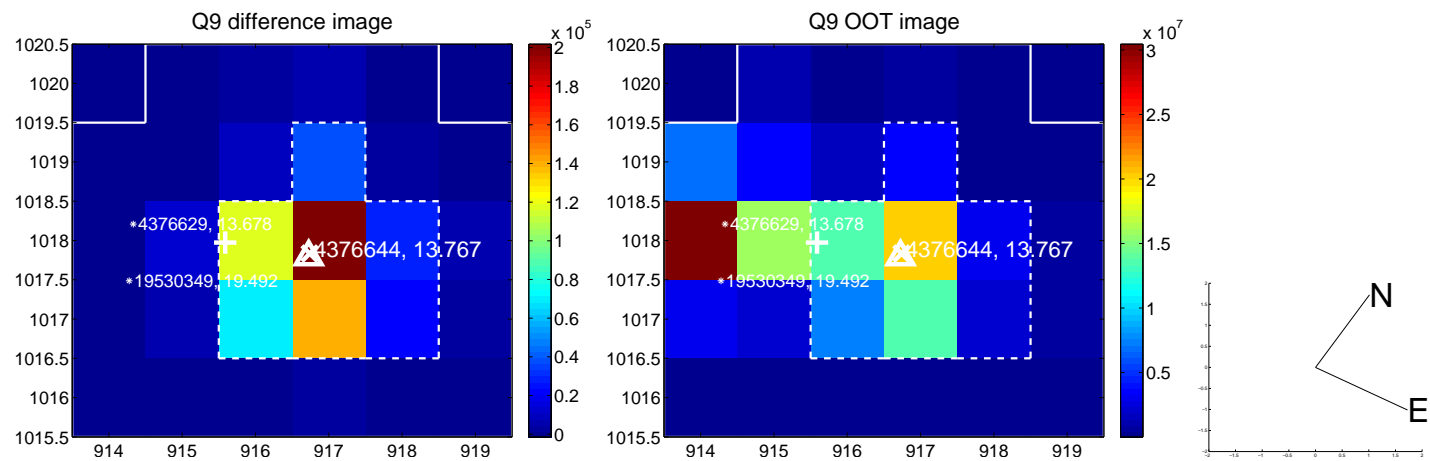
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



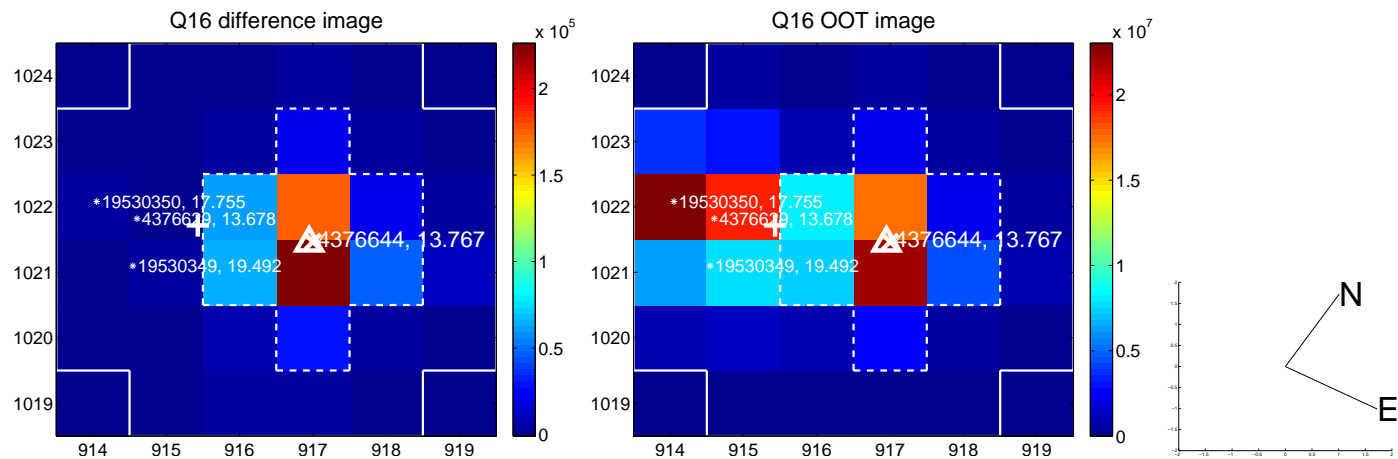
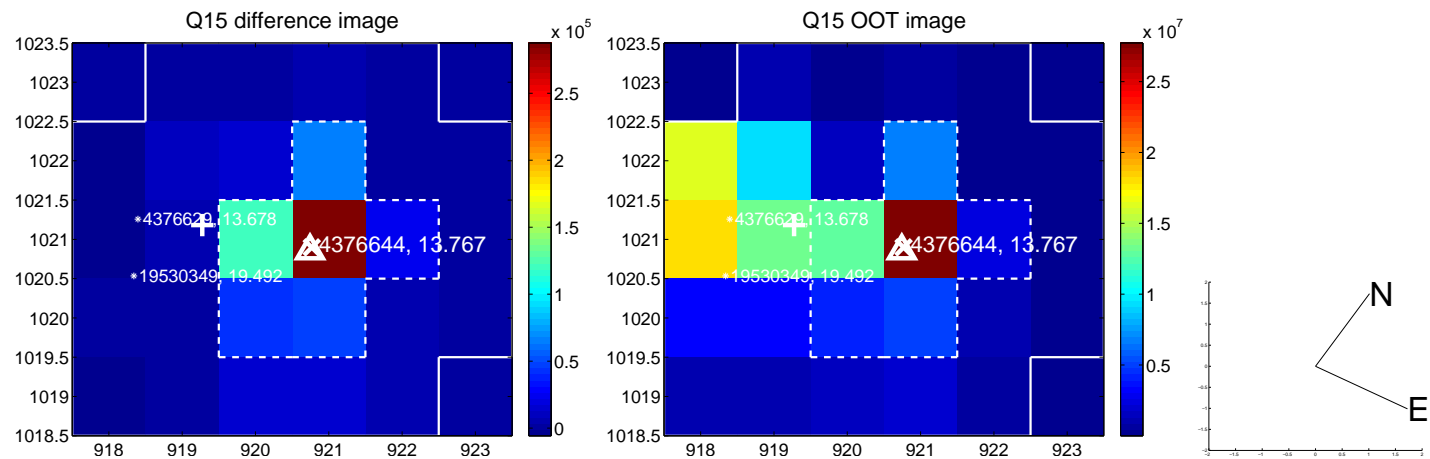
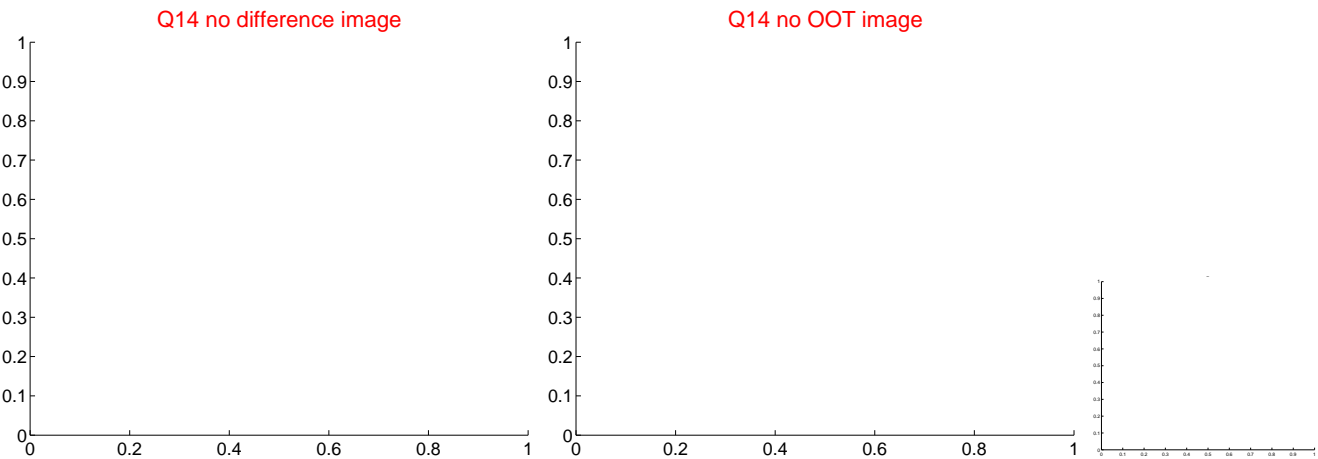
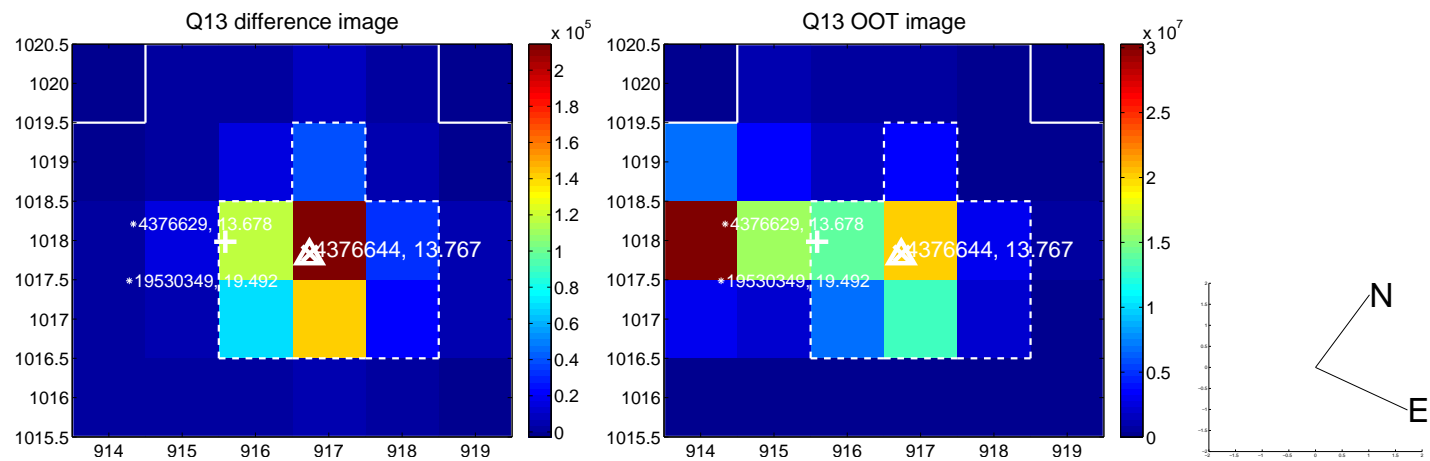
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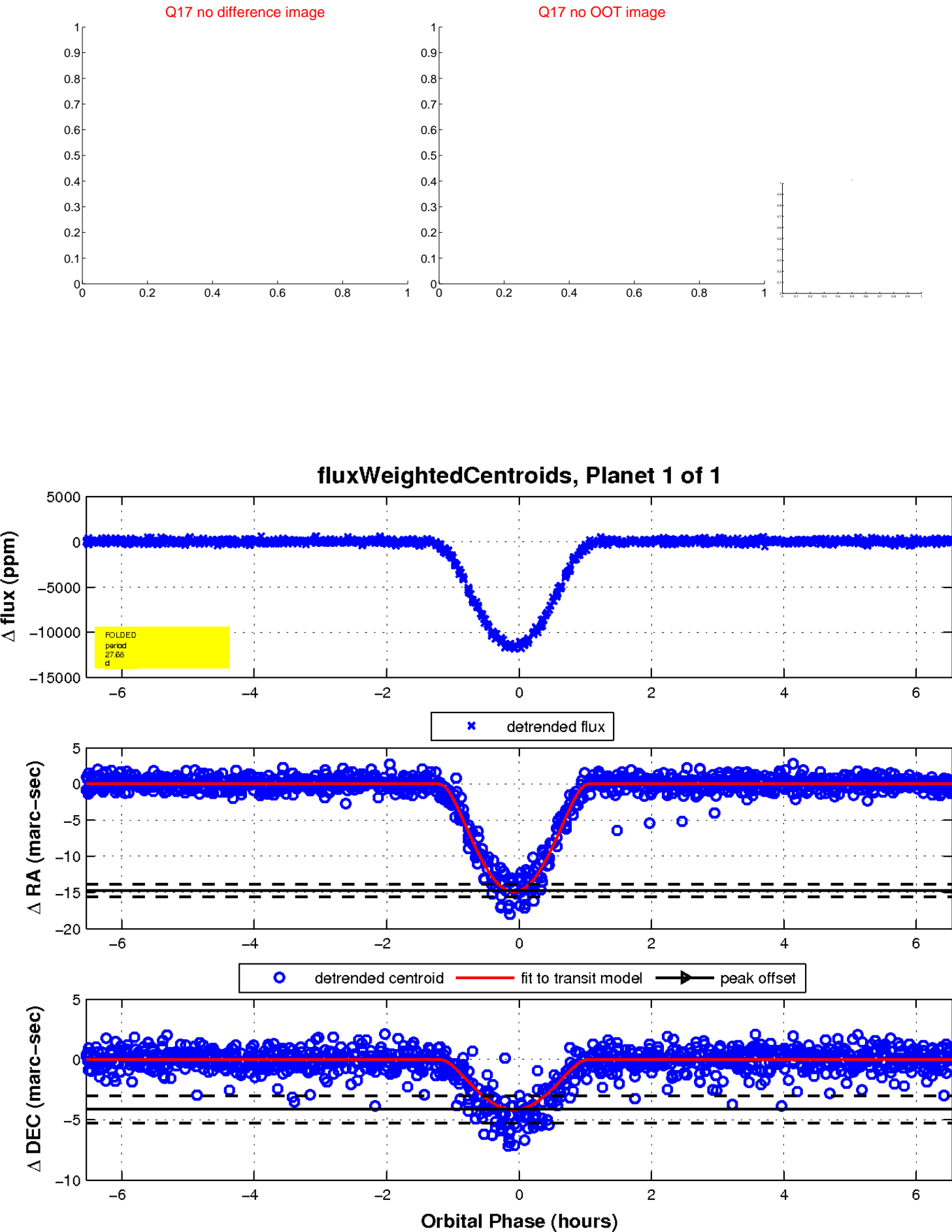
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UKIRT Image

Declination

