

KIC 004996558

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})
004996558-01	OBS	5111.01	3.017157	133.687810	839.7	10.350	107.9	128.4	1.30	5893	7.31	1154.83

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004996558-01	OBS	FP	0.00	0	1	1	0	MOD_SEC_ALT—DEEP_V_SHAPED—CENT_UNRESOLVED_OFFSET—HALO_GHOST

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

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

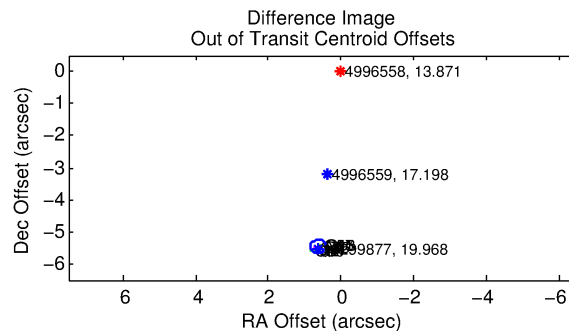
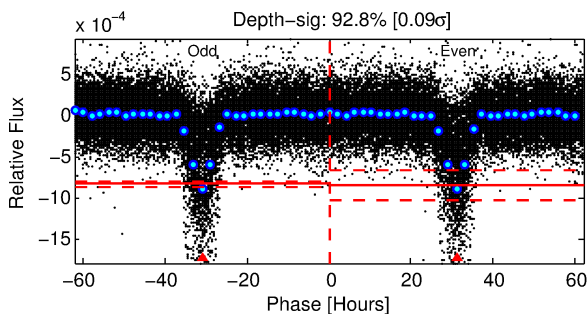
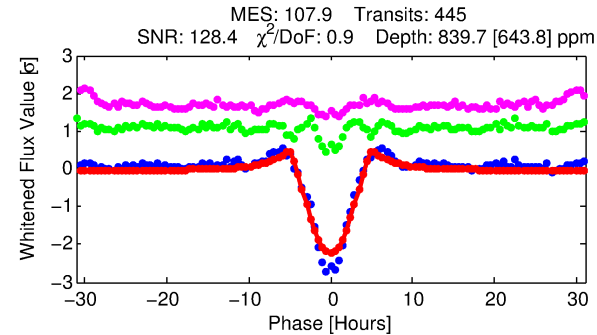
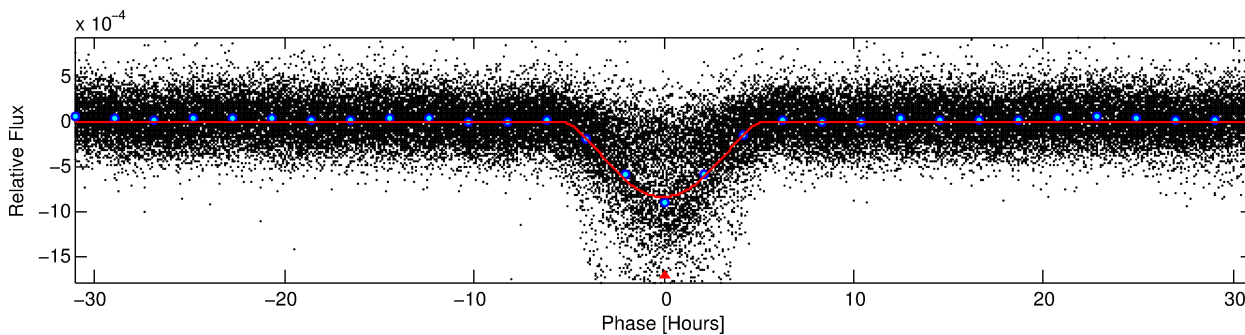
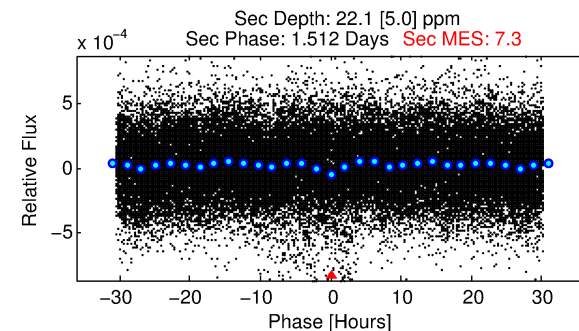
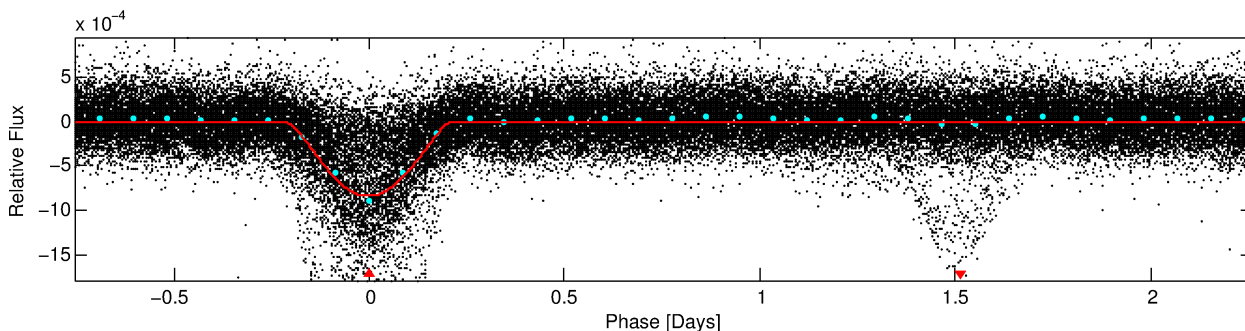
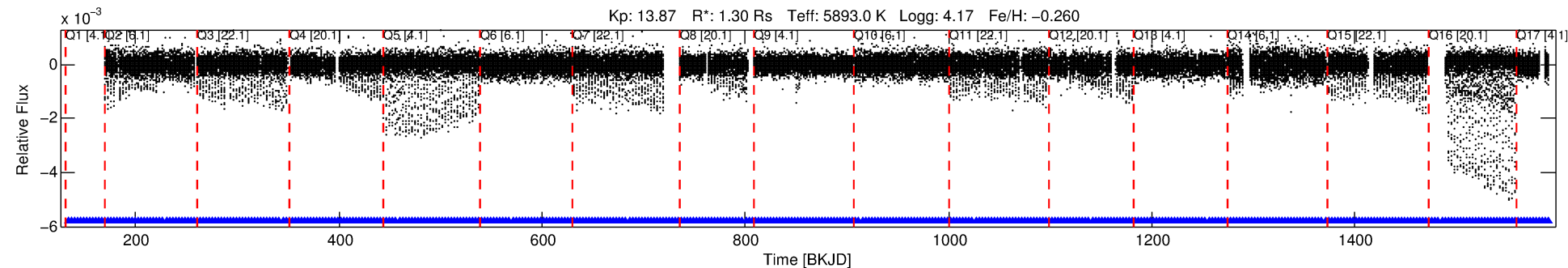
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004996558-01

No Significant Match Found

DV One-Page Summary

KIC: 4996558 Candidate: 1 of 1 Period: 3.017 d
KOI: K05111.01 Corr: 0.970



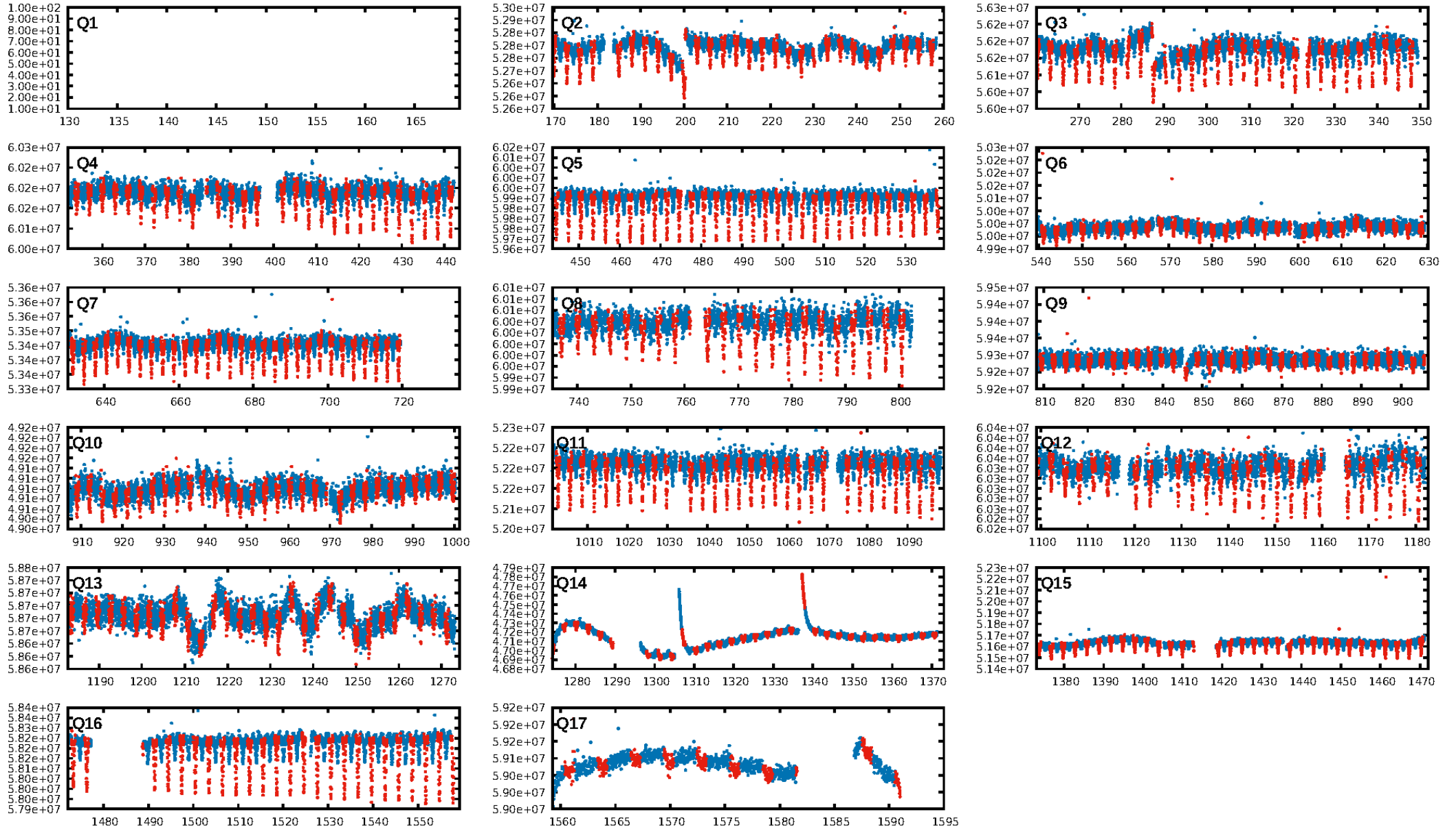
DV Fit Results:

Period = 3.01716 [0.00001] d
Epoch = 133.6878 [0.0015] BKJD
Rp/R* = 0.0515 [0.0098]
a/R* = 1.25 [0.01]
b = 1.00 [0.01]
Seff = 1154.83 [607.16]
Teq = 1486 [195] K
Rp = 7.31 [2.56] Re
a = 0.0398 [0.0122] AU
Ag = 0.36 [0.24] [-2.62σ]
Teffp = 1781 [206] K [1.04σ]

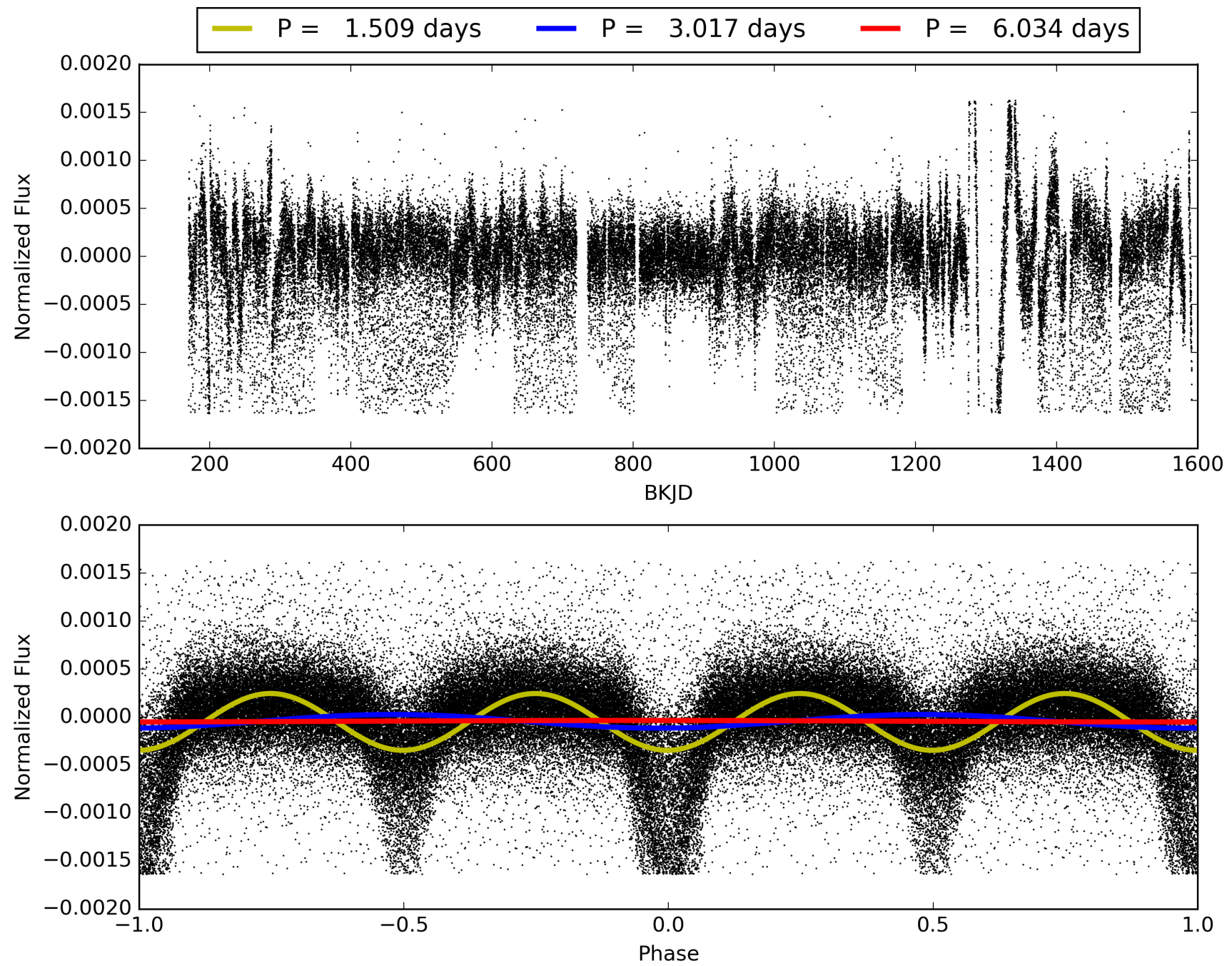
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [436/436]
GhostDiagnostic-chr: -0.08904
Centroid-sig: 0.0%
Centroid-so: 24.360 arcsec [159.98σ]
OotOffset-rm: 5.500 arcsec [78.51σ]
KicOffset-rm: 5.552 arcsec [80.95σ]
OotOffset-st: 4/4/4/4 [16]
KicOffset-st: 4/4/4/4 [16]
DiffImageQuality-fgm: 1.00 [16/16]
DiffImageOverlap-fno: 1.00 [16/16]

TCE 004996558-01, PDC Light Curves

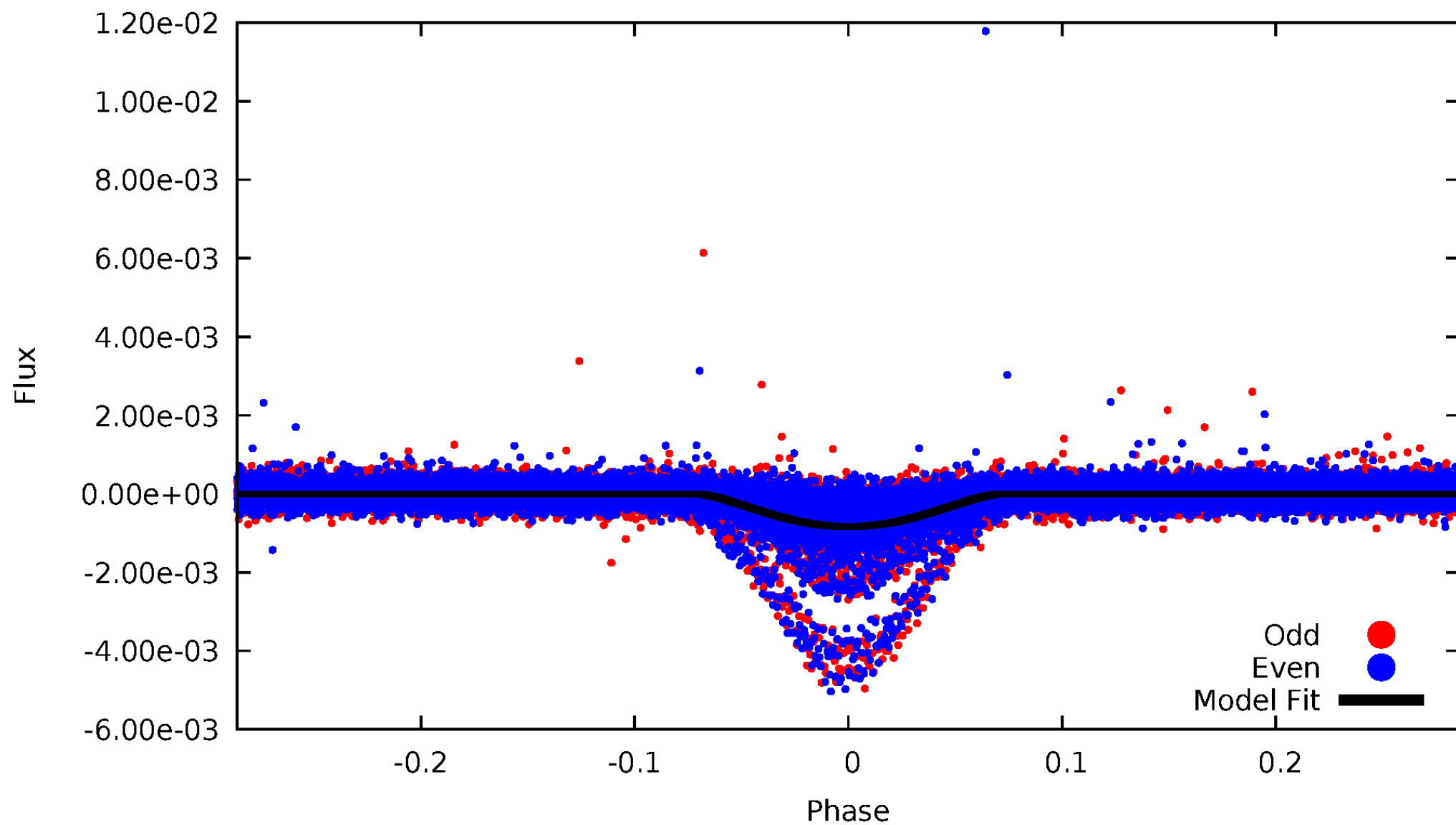


TCE 004996558-01



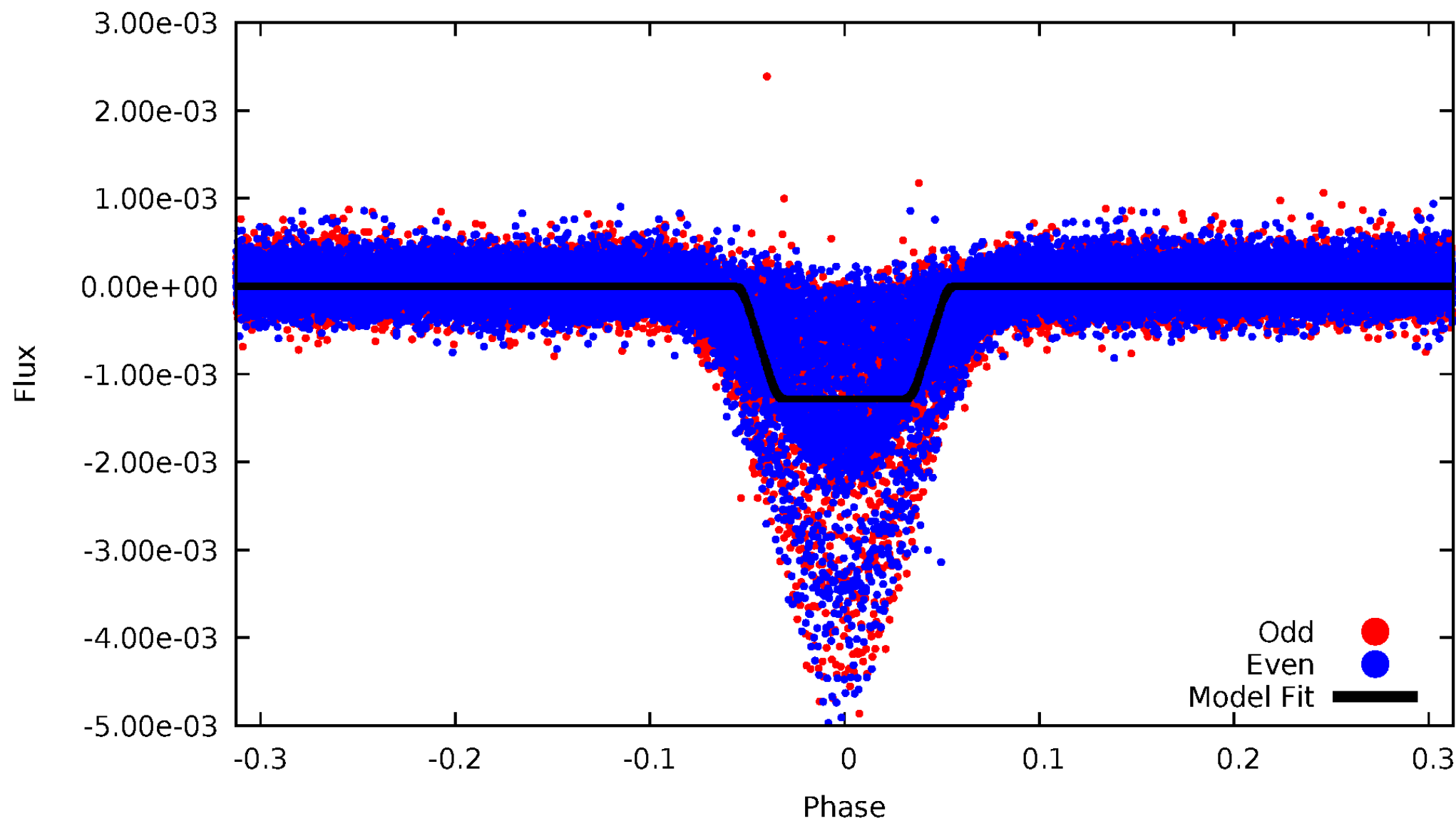
DV Odd/Even

TCE 004996558-01



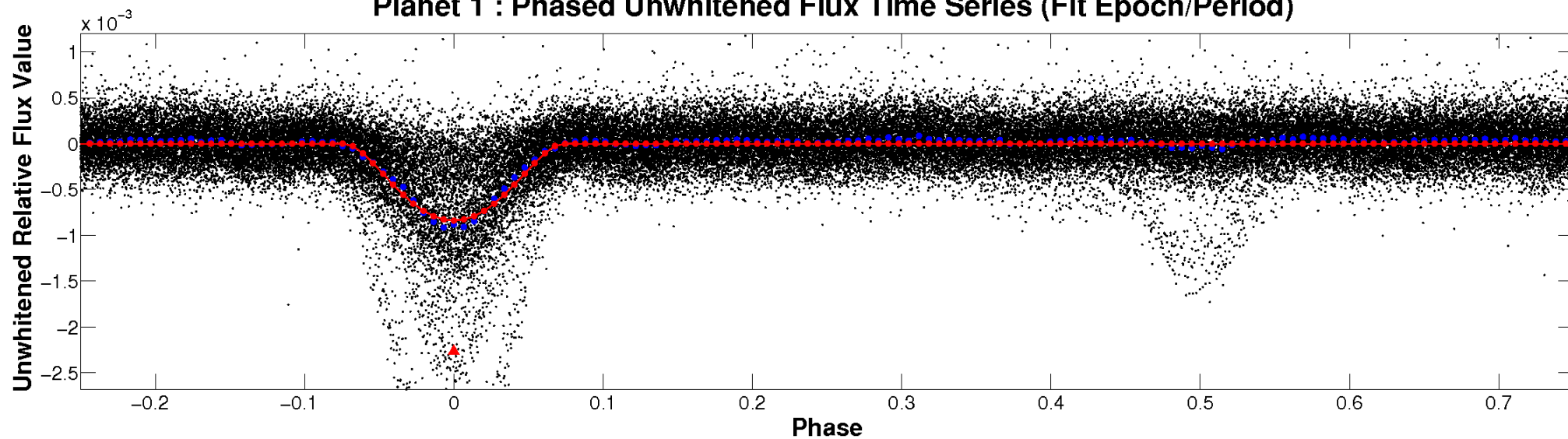
ALT Odd/Even

TCE 004996558-01

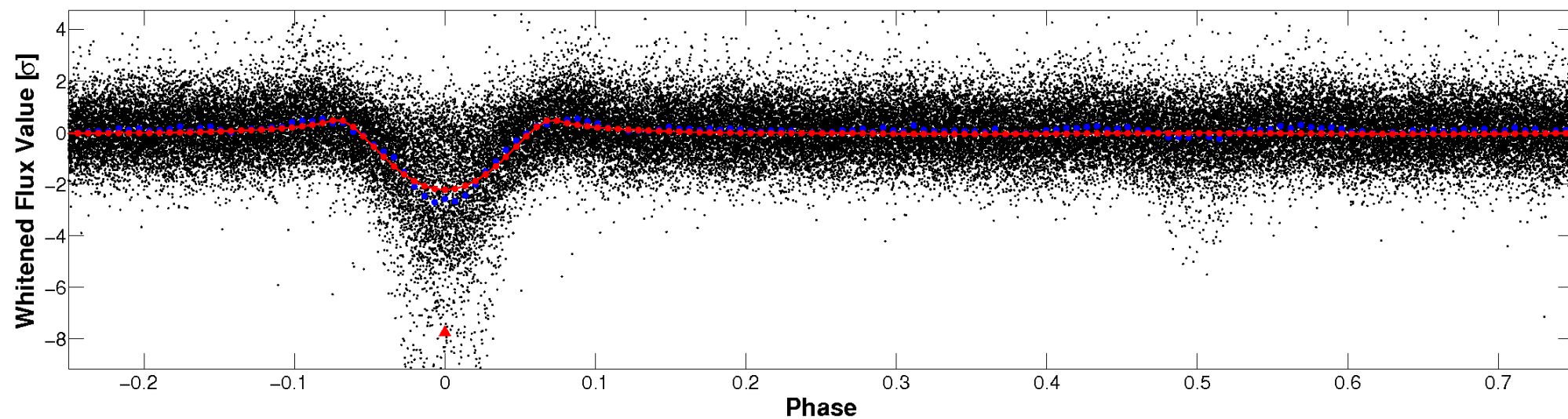


Non-Whitened Vs. Whitened Light Curve

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

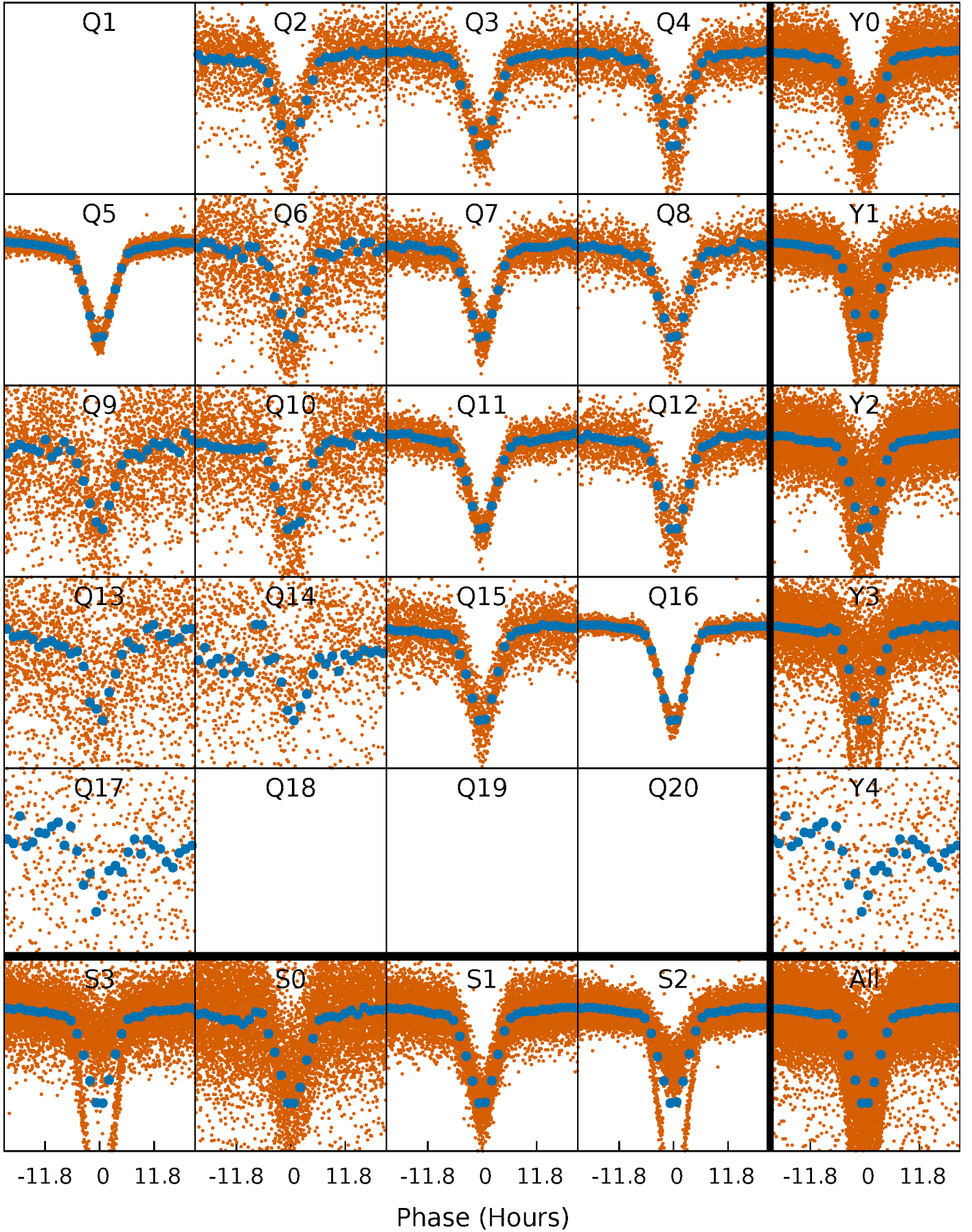


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



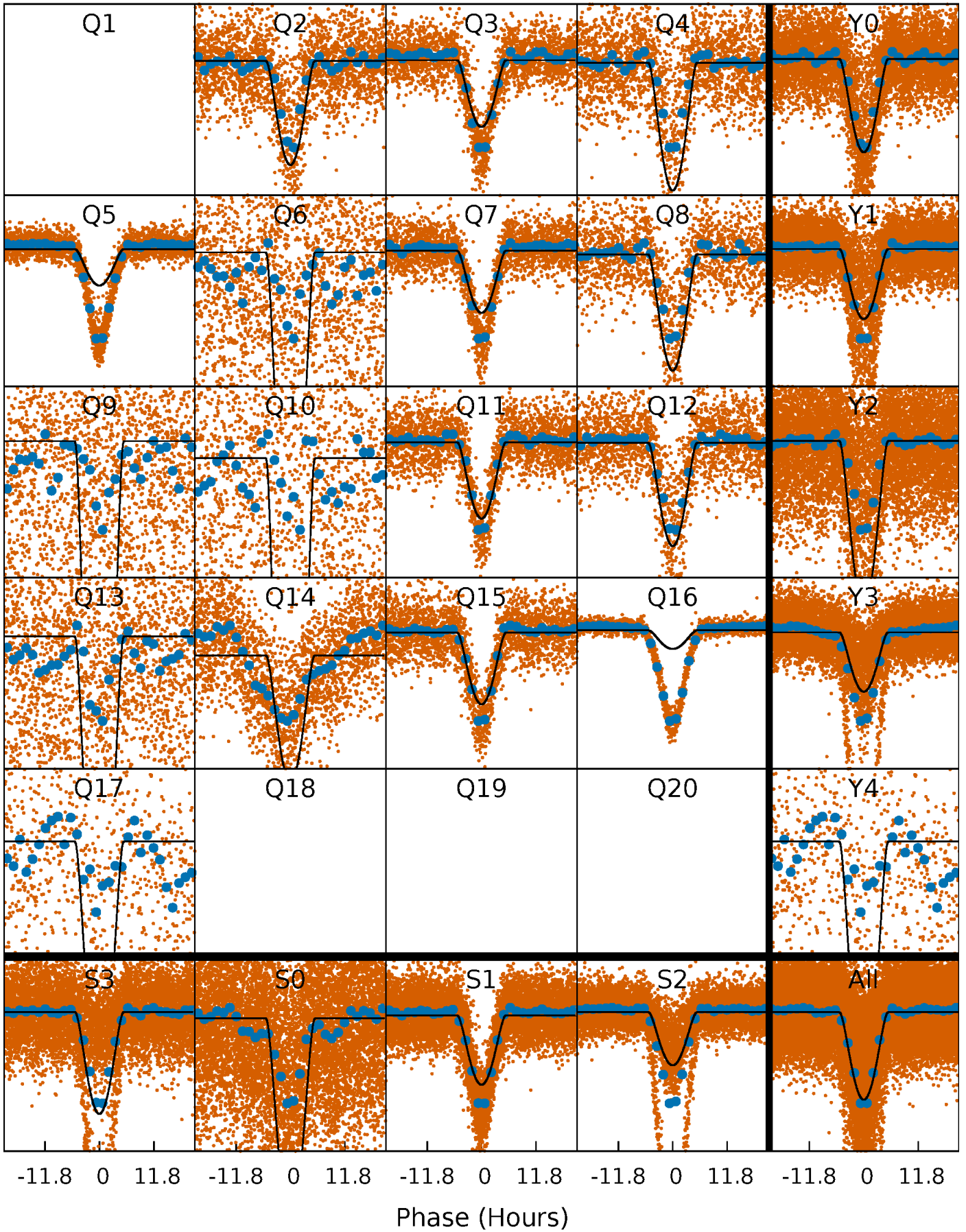
PDC Quarter-Phased Transit Curves

TCE 004996558-01 P= 3.017157 Days $T_0=133.687810$ (BKJD)



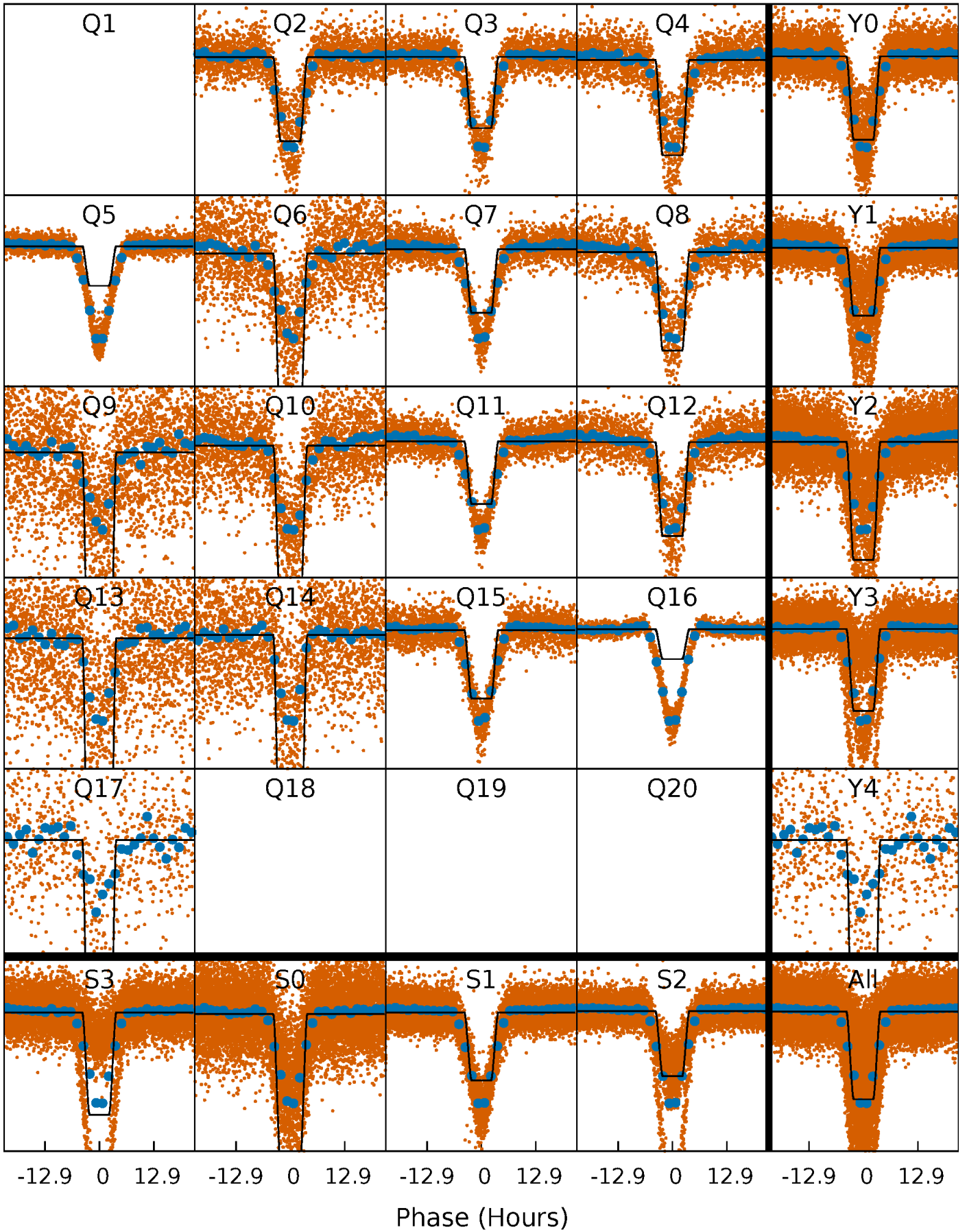
DV Quarter-Phased Transit Curves

TCE 004996558-01 P= 3.017157 Days $T_0=133.687810$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

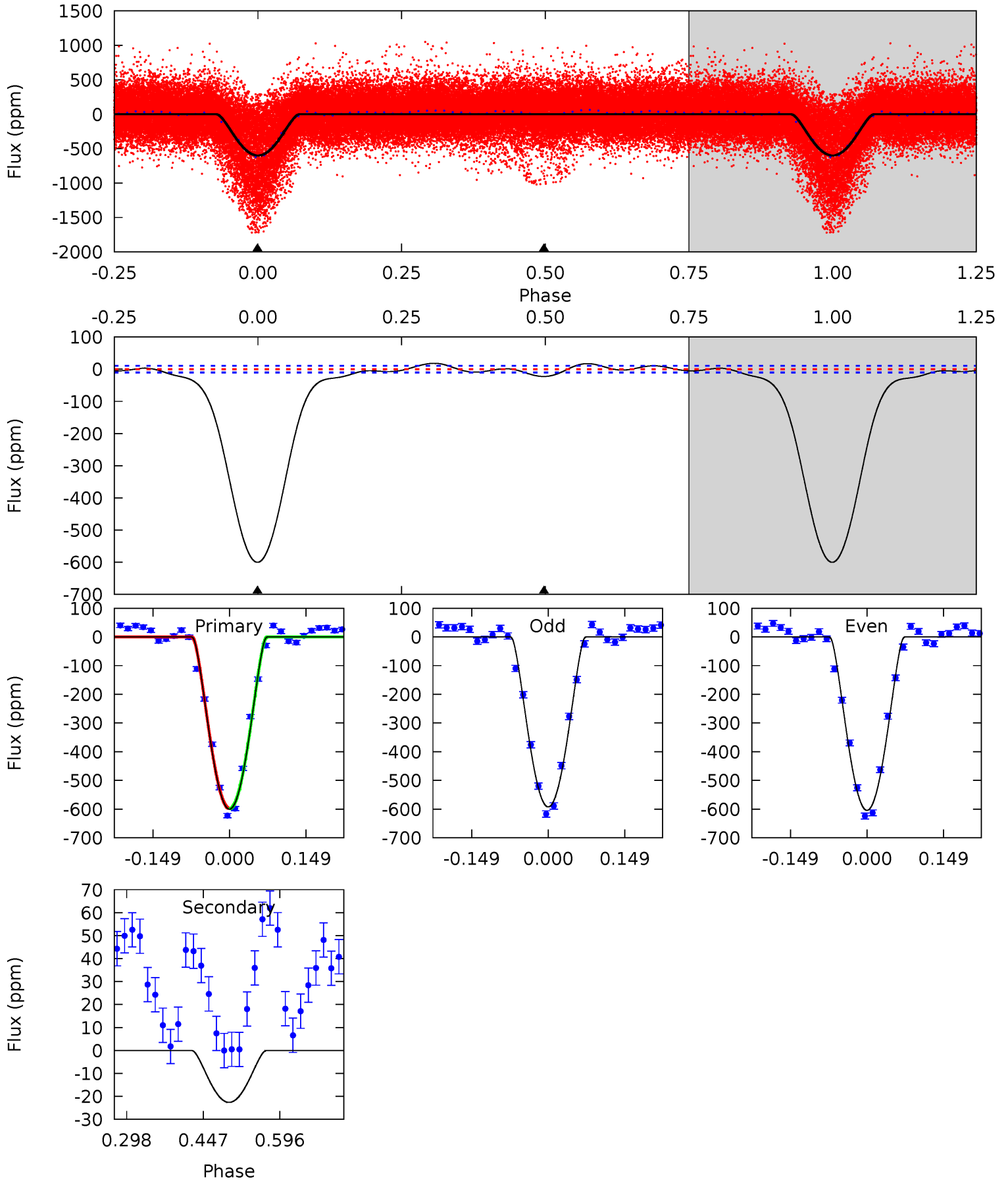
TCE 004996558-01 P= 3.017164 Days $T_0=133.685069$ (BKJD)



DV Model-Shift Uniqueness Test

004996558-01, P = 3.017157 Days, E = 133.687810 Days

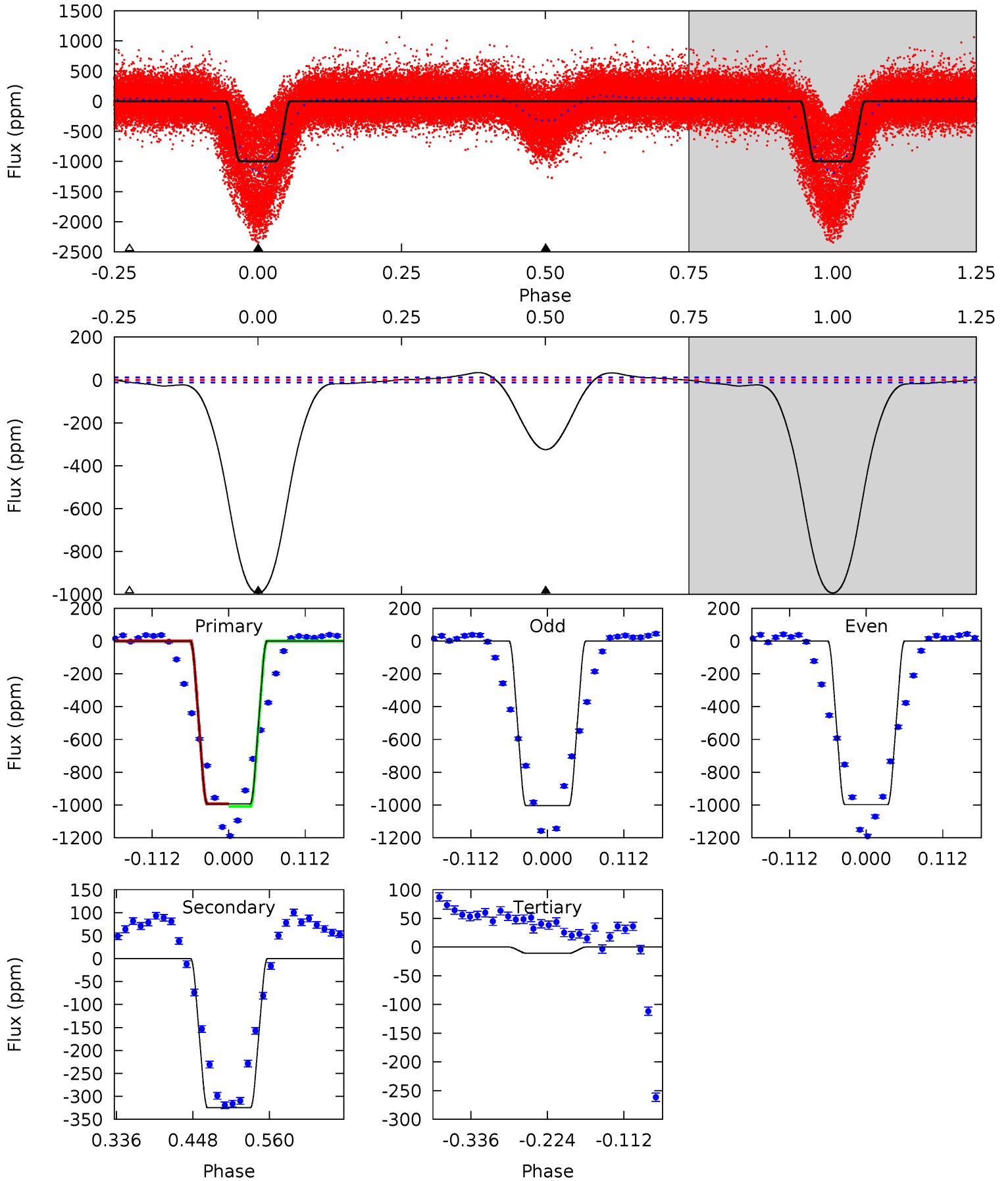
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
254.0	9.58	0	0	4.48	1.44	3.77	254.0	254.0	9.58	9.58	2.54	1.21	0.03	0.19



Alt Model-Shift Uniqueness Test

004996558-01, P = 3.017164 Days, E = 133.685069 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
373.6	122.2	3.99	0	4.54	1.59	6.57	369.6	373.6	118.2	122.2	1.29	1.05	0.03	2.81



Stellar Parameters For KIC 004996558

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5893^{+178}_{-195}	$4.175^{+0.306}_{-0.165}$	$-0.260^{+0.300}_{-0.300}$	$1.302^{+0.343}_{-0.382}$	$0.926^{+0.143}_{-0.095}$	$0.590^{+1.072}_{-0.298}$
	+3%/-3%	+7%/-4%	+115%/-115%	+26%/-29%	+15%/-10%	+182%/-50%
Source	PHO54	PHO54	PHO54	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 004996558-01 / KOI 5111.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-23 ± 2	$7.02^{+1.98}_{-1.72}$	2051^{+160}_{-184}	2223^{+344}_{-4315}	$0.410^{+0.298}_{-0.159}$
Alt.	-325 ± 3	$4.95^{+1.73}_{-1.49}$	2059^{+160}_{-183}	4372^{+584}_{-398}	12^{+12}_{-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 $T_{\text{obs}} \gg T_{\text{max}}$ AND $A_{\text{obs}} \gg 1.0$

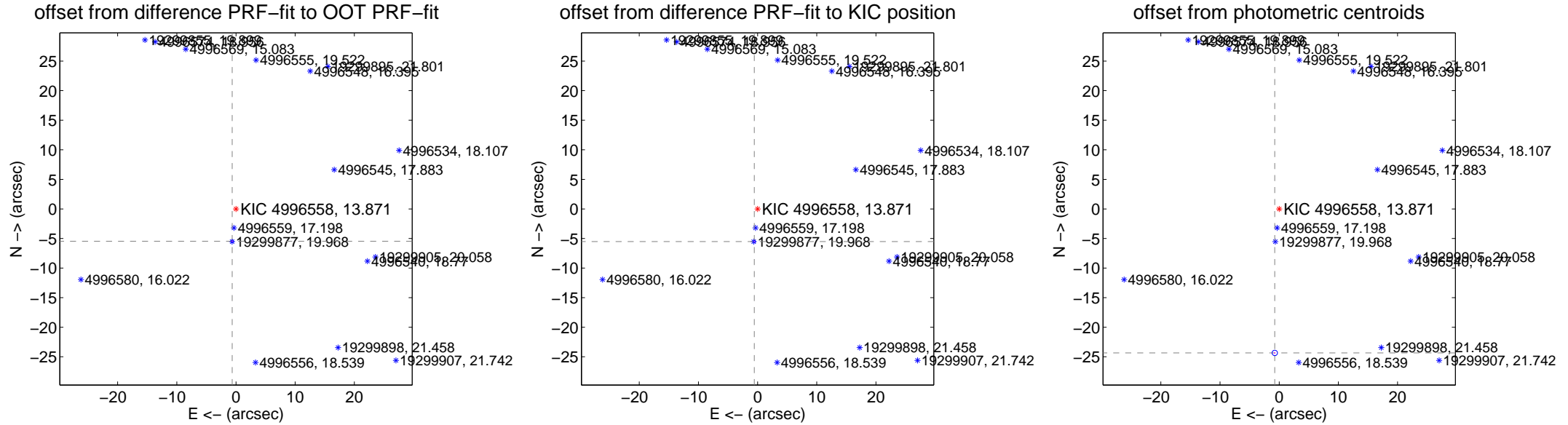
DV Centroid Data

Supplemental centroid analysis for 004996558-01. Kepler magnitude: 13.87. Transit SNR 128.45

There are 16 quarters with good PRF difference image offsets

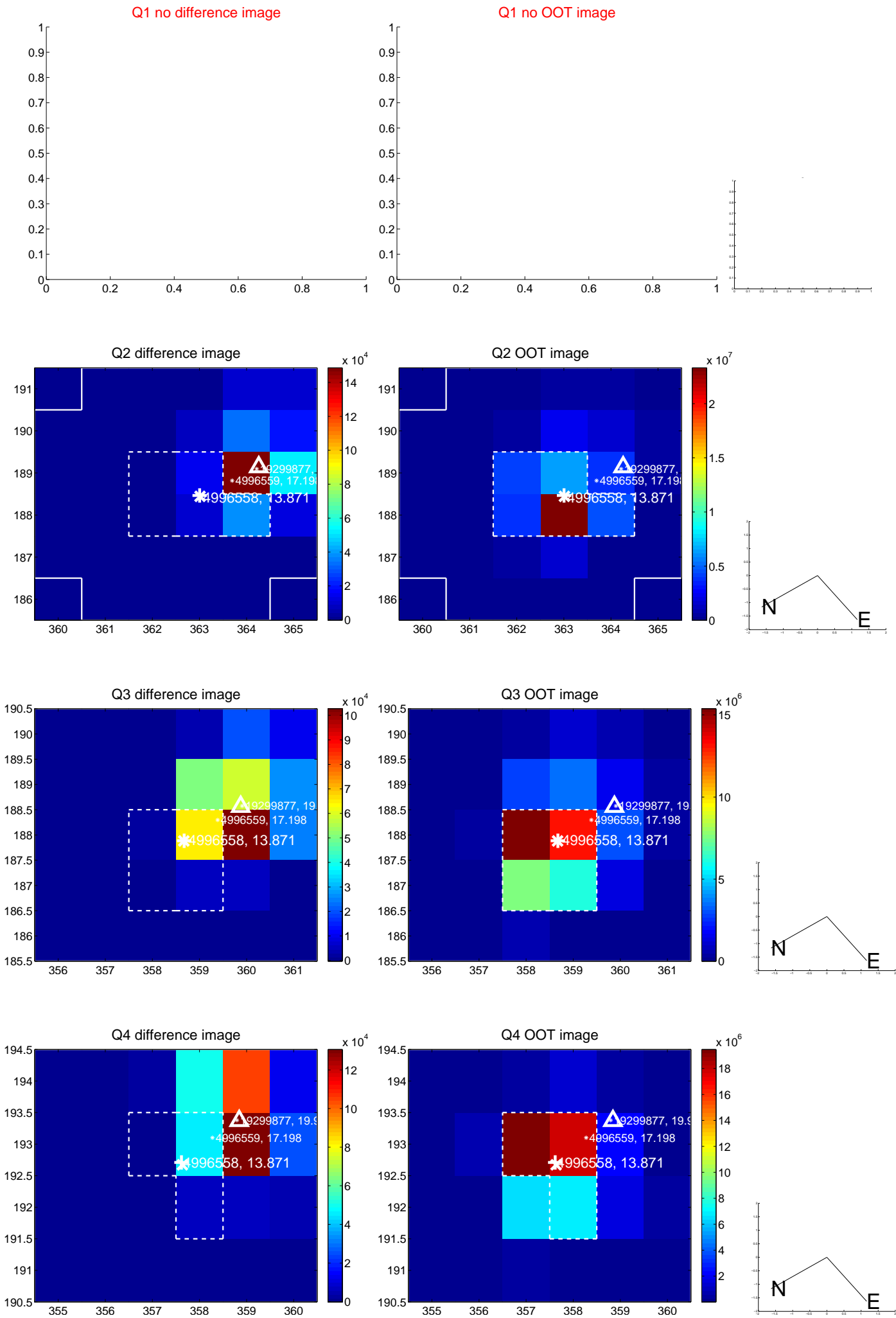
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	5.500 \pm 0.070	78.51	0.643 \pm 0.071	-5.462 \pm 0.069
PRF-fit source offset from KIC position	5.552 \pm 0.069	80.95	0.561 \pm 0.069	-5.524 \pm 0.068
photometric centroid source offset	24.36 \pm 0.15	159.98	0.75 \pm 0.05	-24.35 \pm 0.15

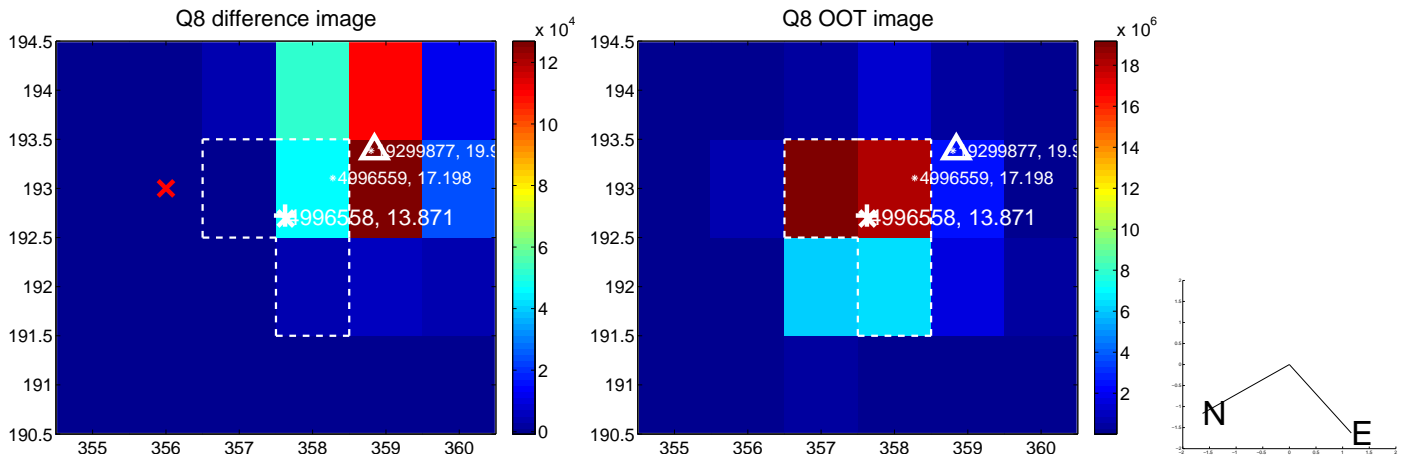
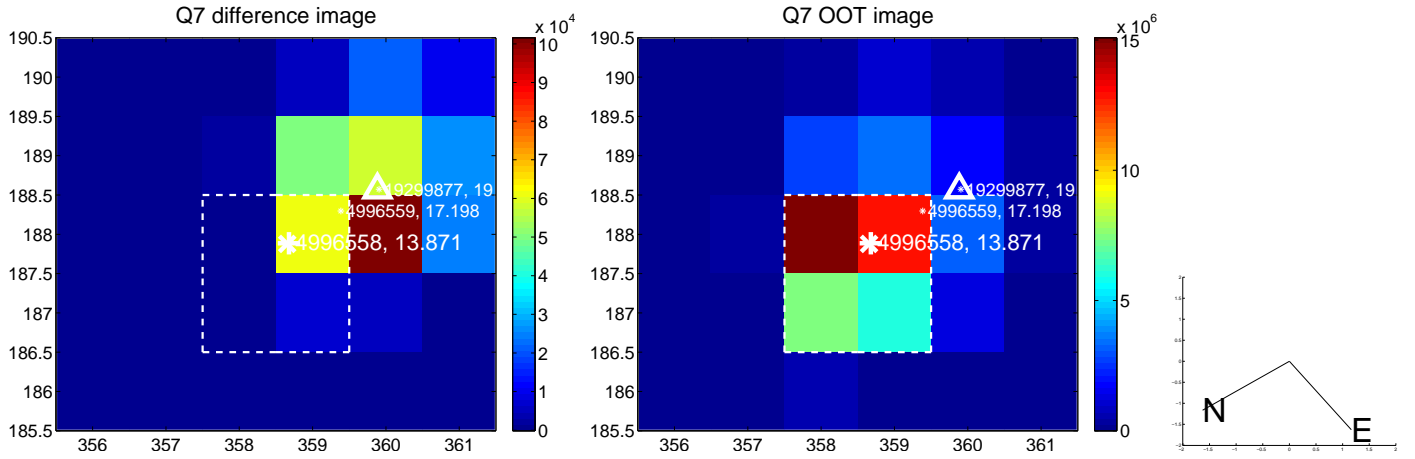
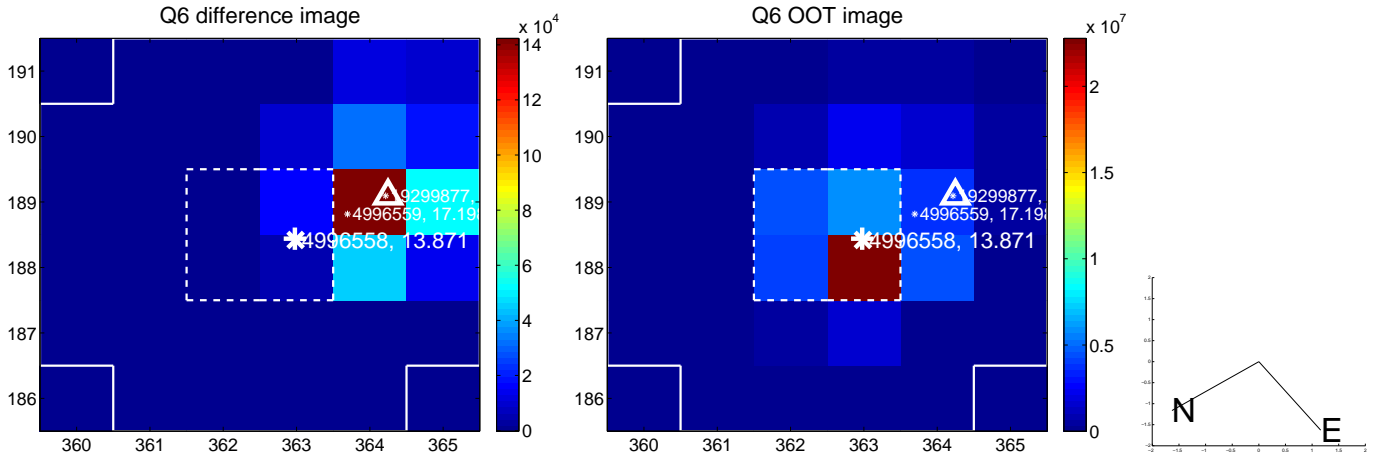
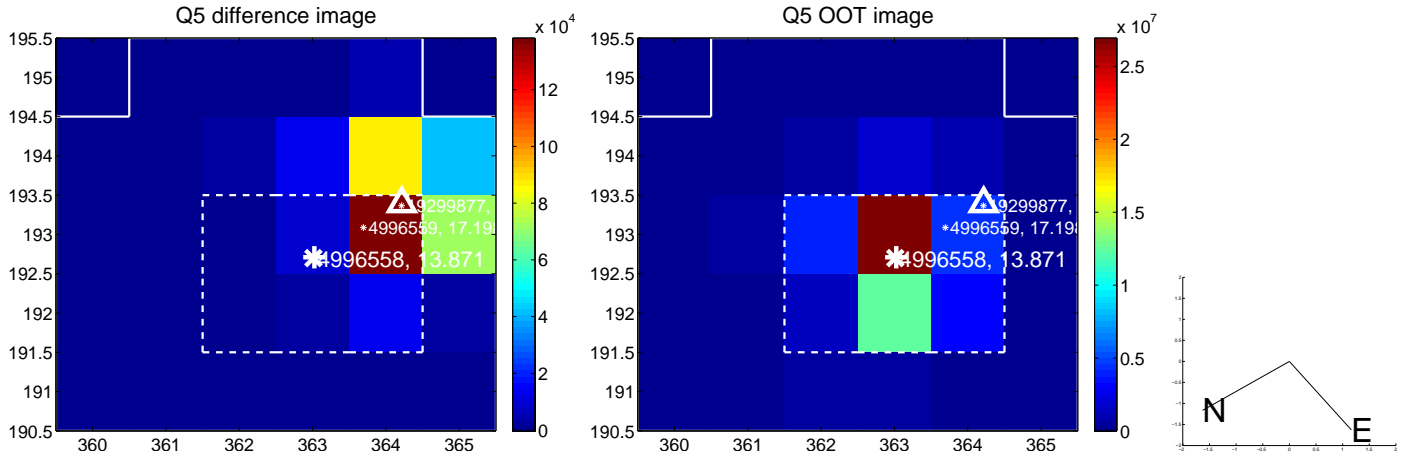


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

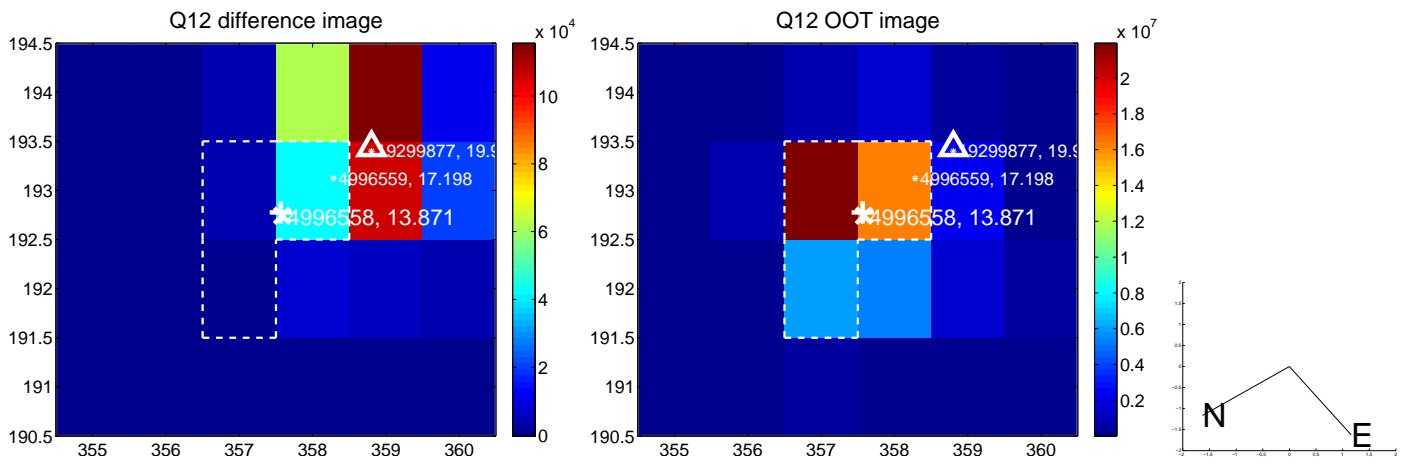
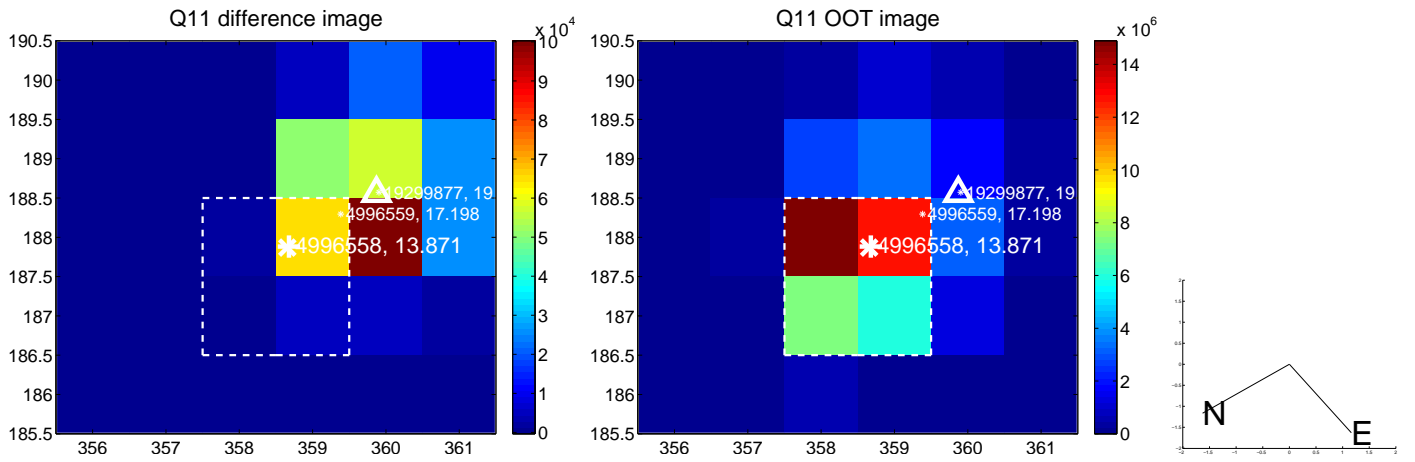
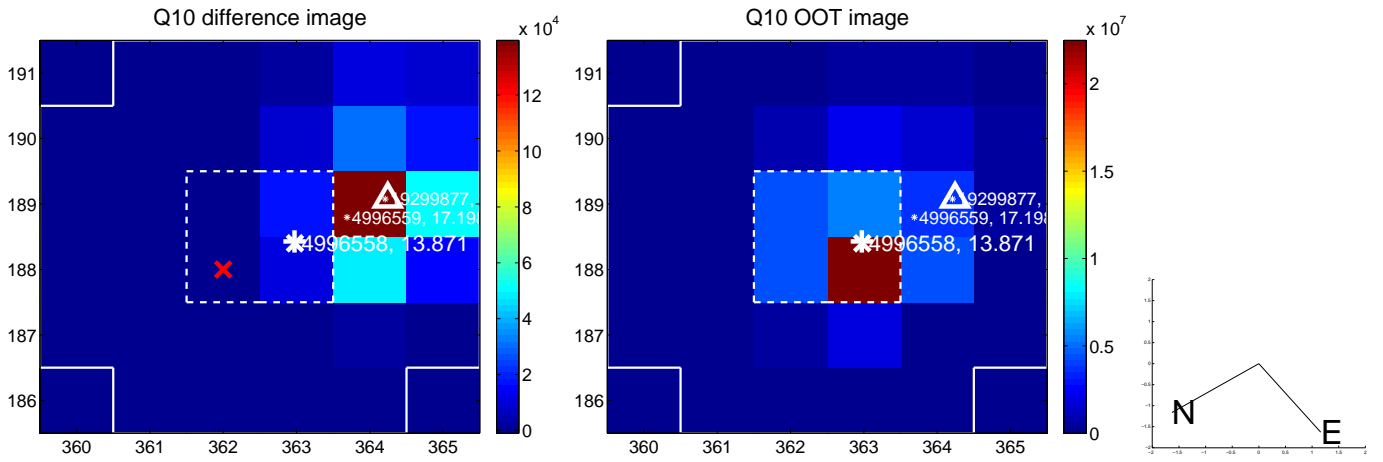
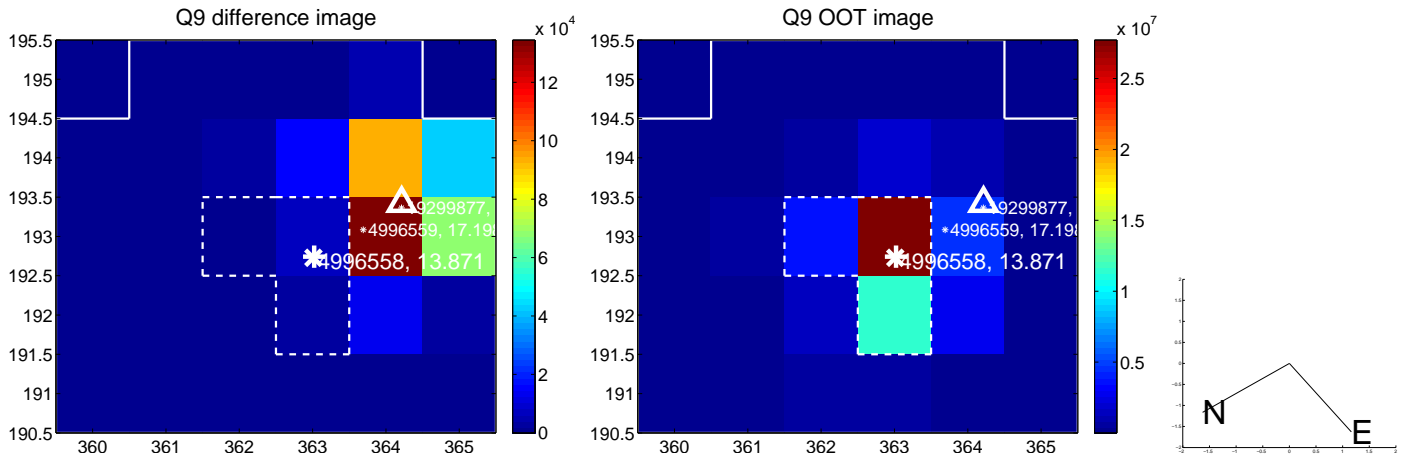
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



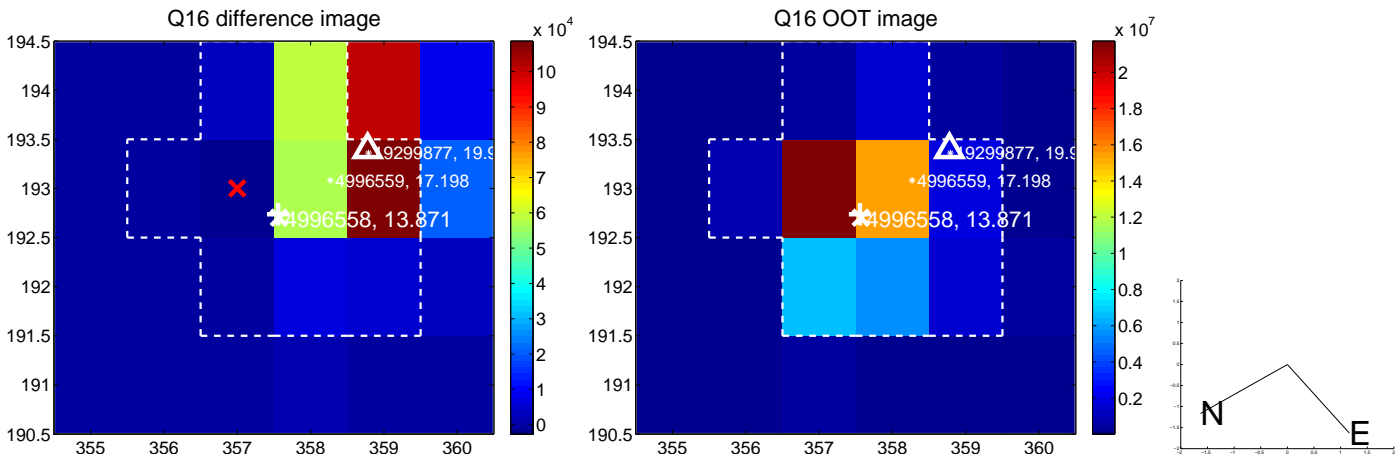
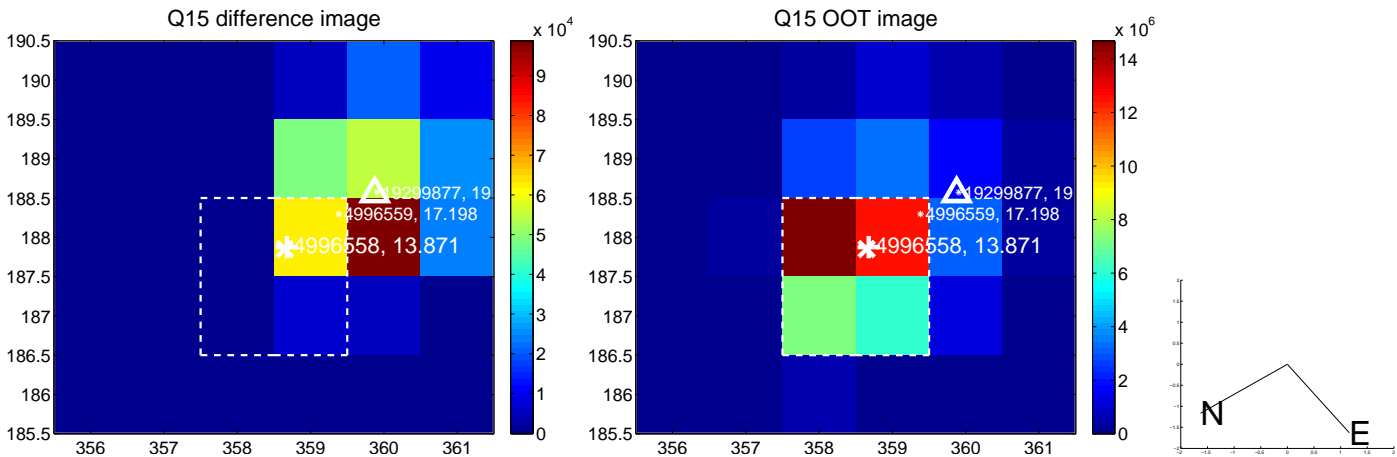
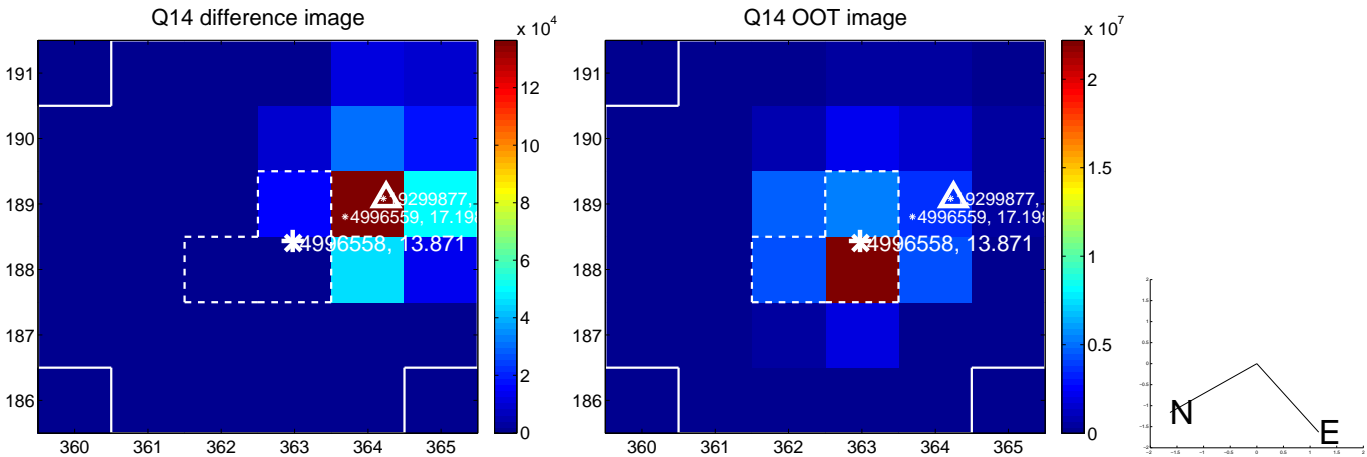
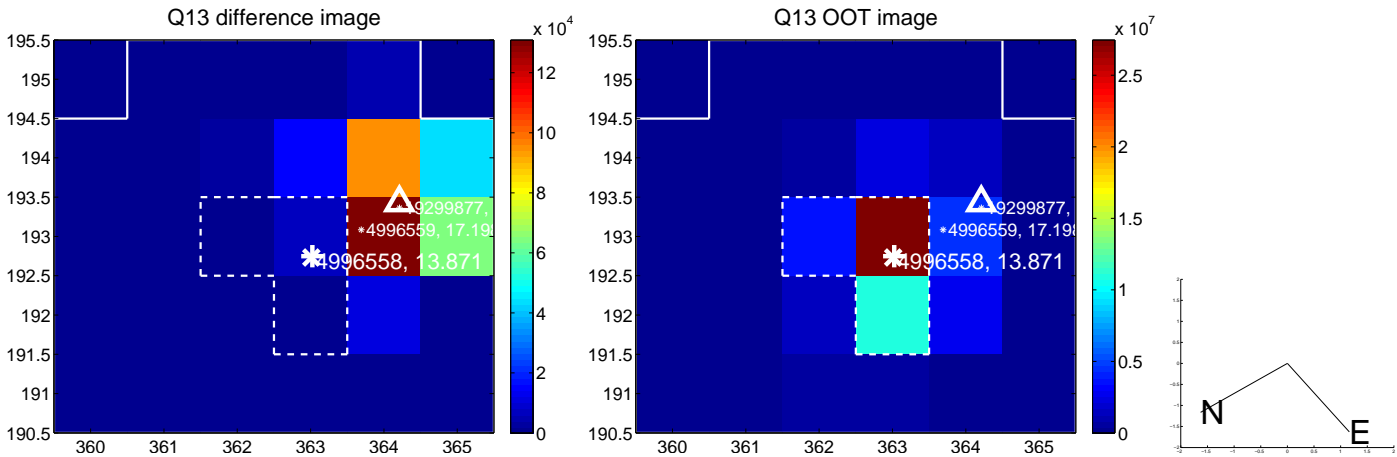
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



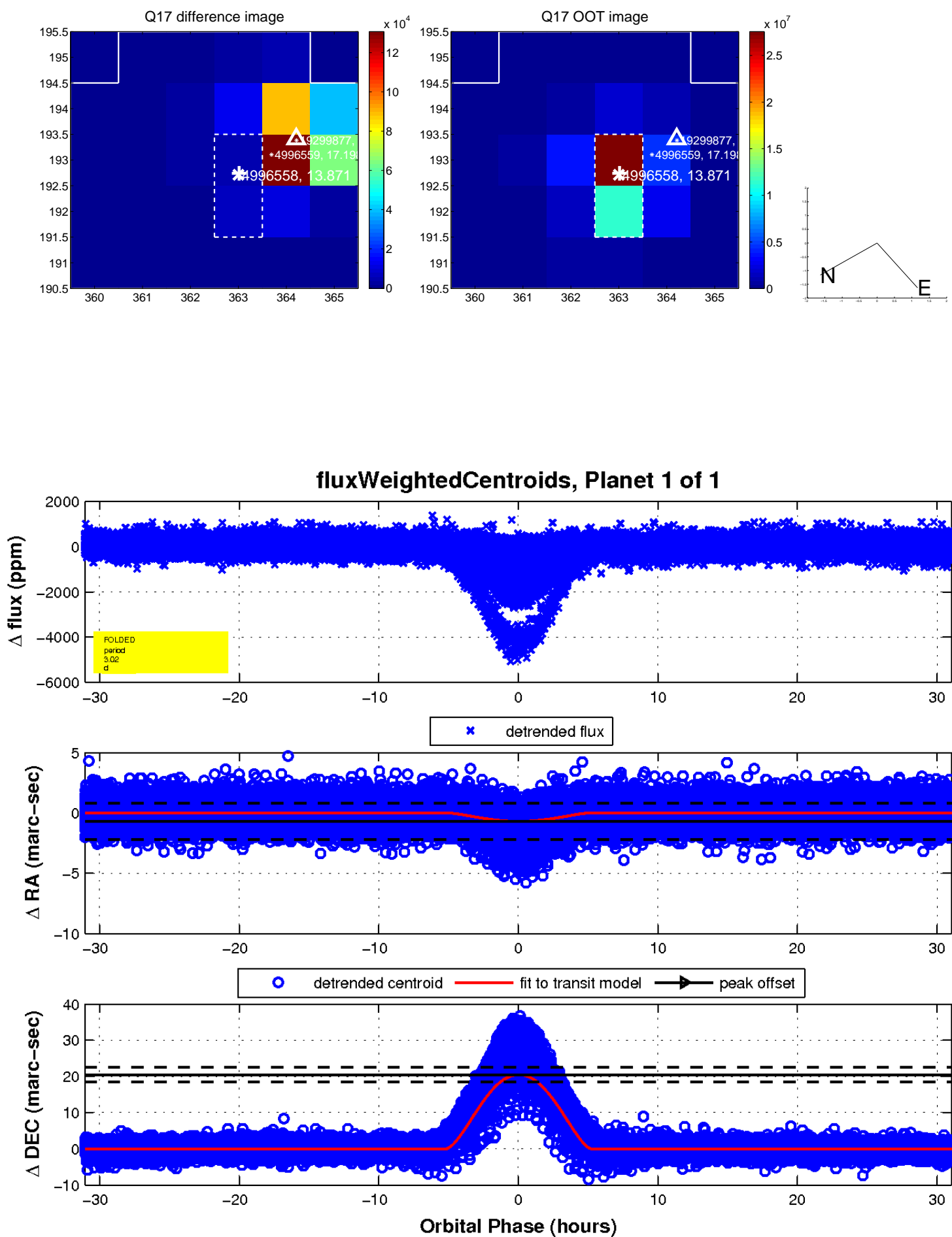
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UKIRT Image

Declination

