

KIC 004677282

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})
004677282-01	OBS	2766.01	1.572130	131.801778	76.8	4.261	18.3	17.2	4.32	6622	4.47	31058.97

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004677282-01	OBS	FP	0.00	0	1	1	1	MOD_SEC_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.

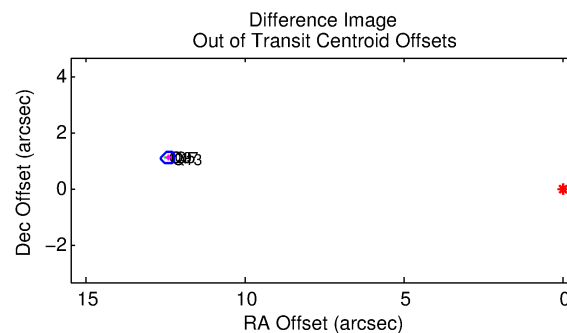
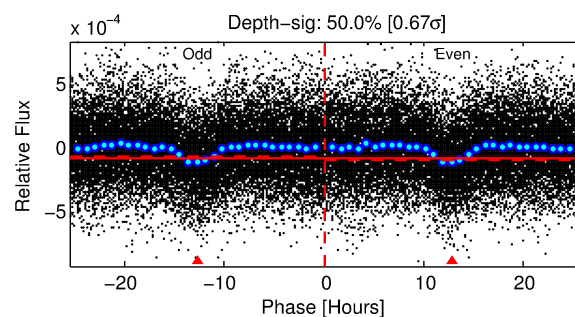
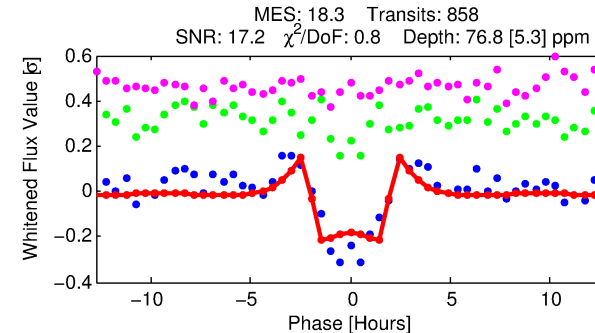
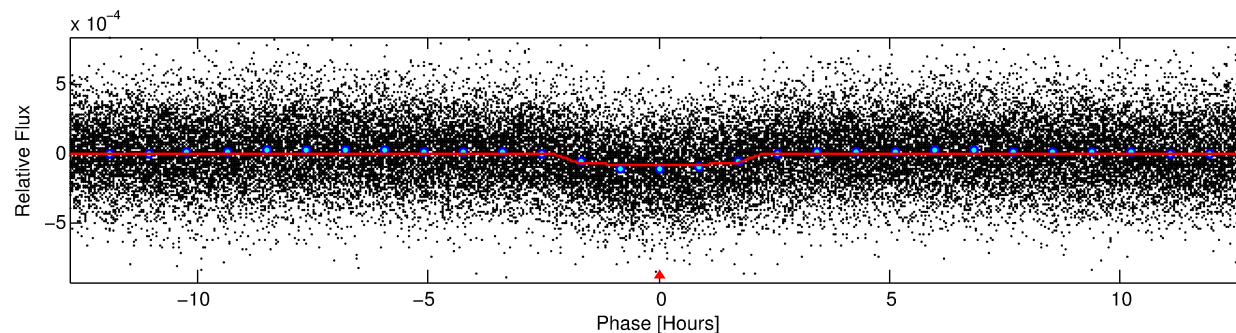
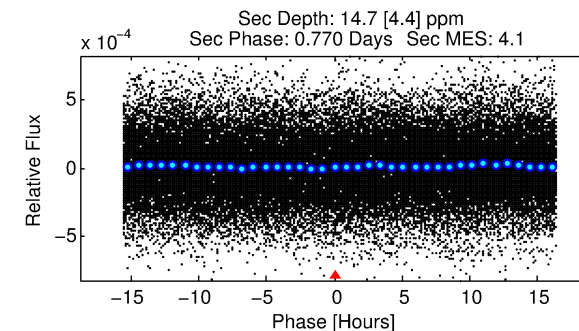
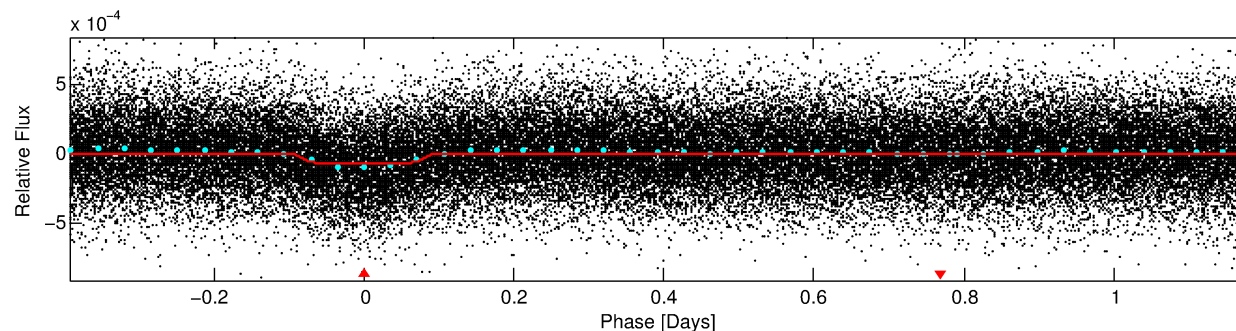
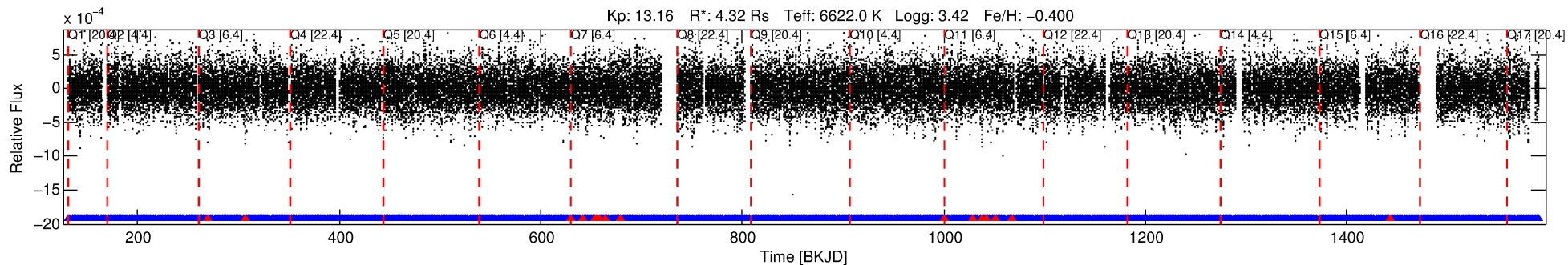
Ephemeris Match Information For 004677282-01

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
004677282-01	4677282	004677321-pri	4677321	1:1	19.3	4	-3	13.48	13.16	1290.90	Direct-PRF	0	2.52	1.76

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: 4677282 Candidate: 1 of 1 Period: 1.572 d
KOI: K02766.01 Corr: 0.752



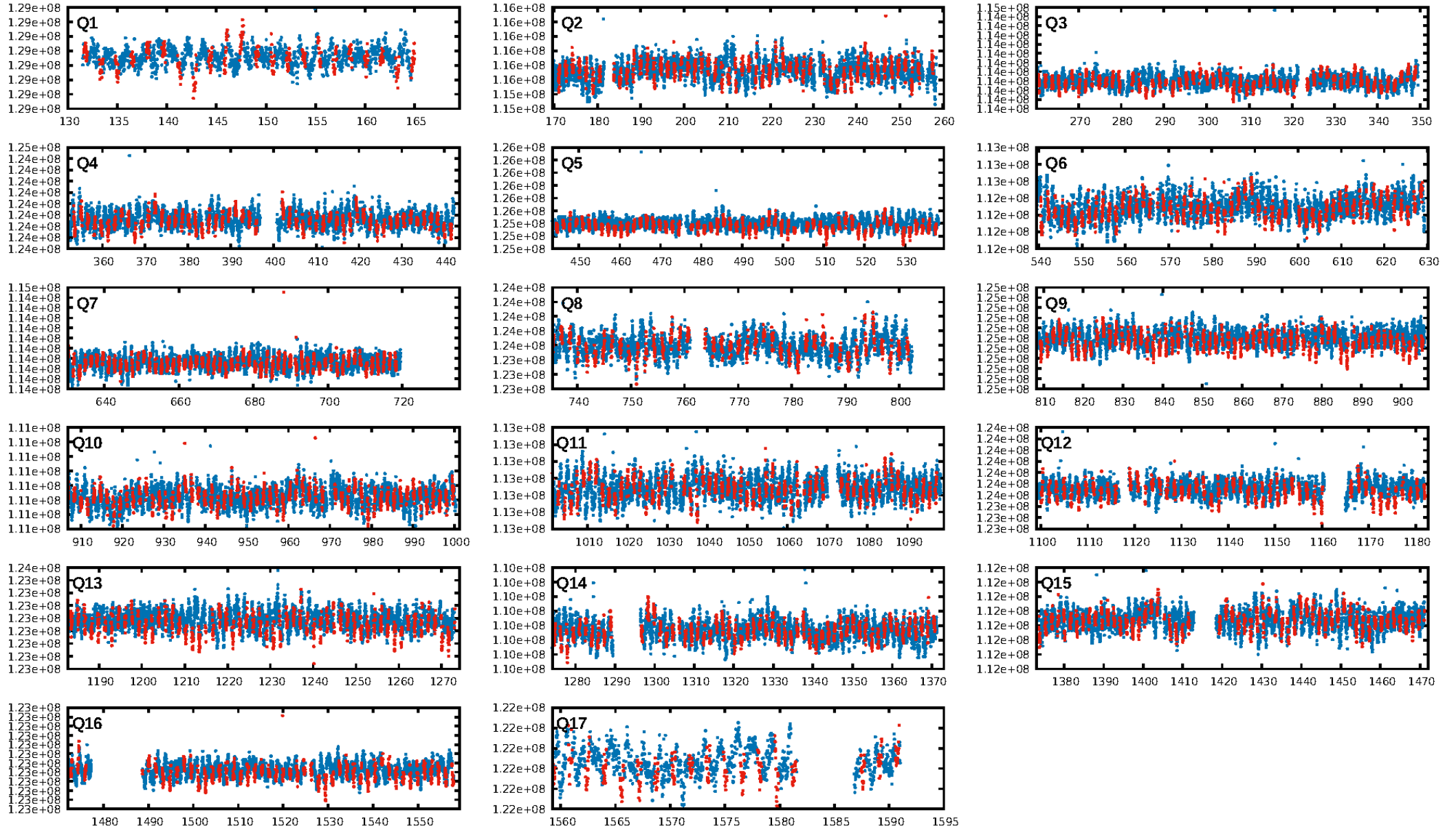
DV Fit Results:

Period = 1.57213 [0.00001] d
Epoch = 131.8018 [0.0015] BKJD
Rp/R* = 0.0095 [0.0010]
a/R* = 1.52 [0.52]
b = 0.92 [0.11]
Seff = 31058.97 [22600.65]
Teq = 3385 [616] K
Rp = 4.47 [2.06] Re
a = 0.0321 [0.0142] AU
Ag = 0.42 [0.34] [-1.73σ]
Teffp = 4206 [409] K [1.11σ]

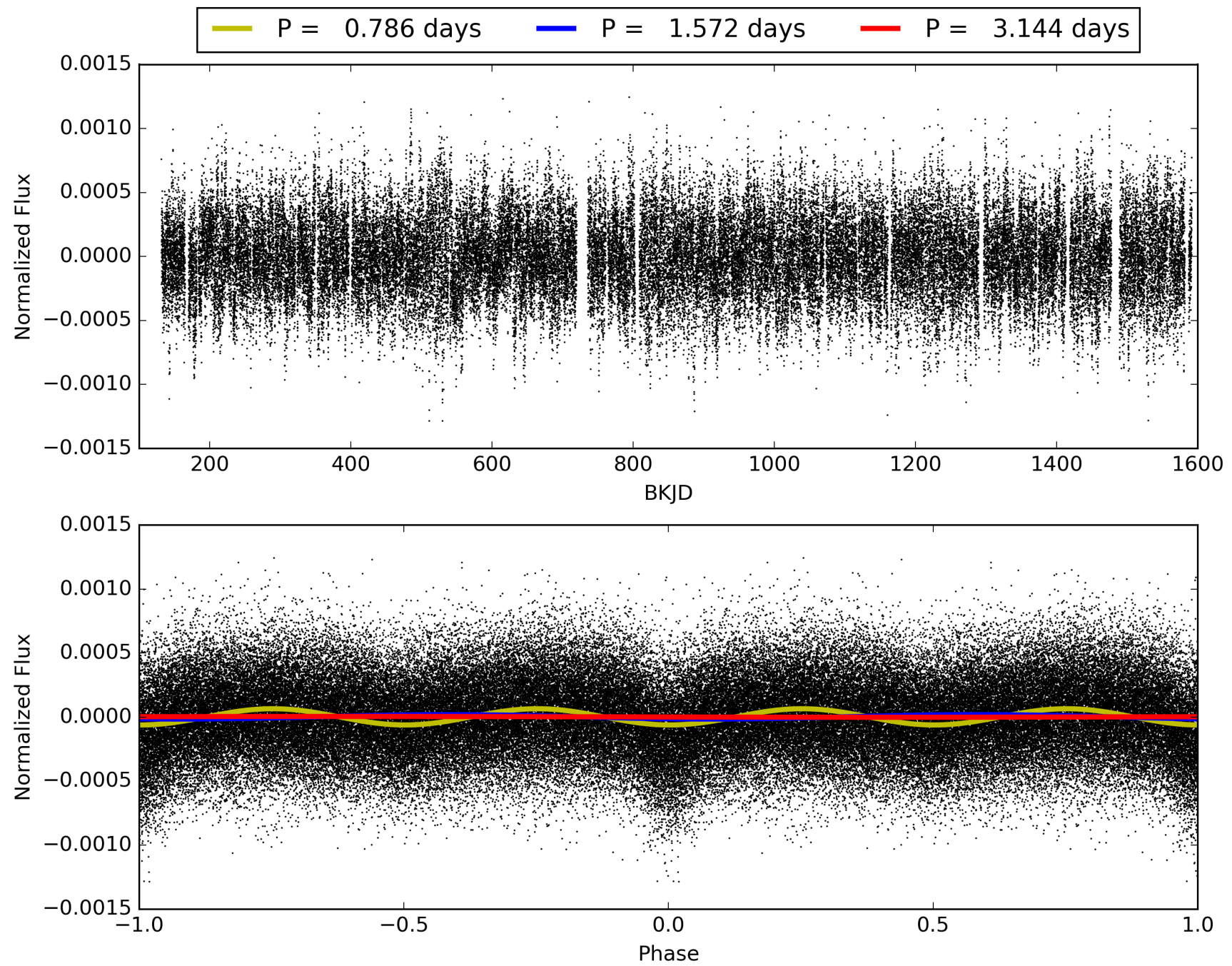
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGoF-sig: N/A
Bootstrap-pfa: 8.75e-61
RollingBand-fgt: 0.98 [802/818]
GhostDiagnostic-chr: -0.2015
Centroid-sig: 0.0%
Centroid-so: 60.607 arcsec [119.71σ]
OotOffset-rm: 12.476 arcsec [174.29σ]
KicOffset-rm: 12.499 arcsec [176.70σ]
OotOffset-st: 0/0/0/5 [5]
KicOffset-st: 0/0/0/5 [5]
DiffImageQuality-fgm: 1.00 [5/5]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 004677282-01, PDC Light Curves

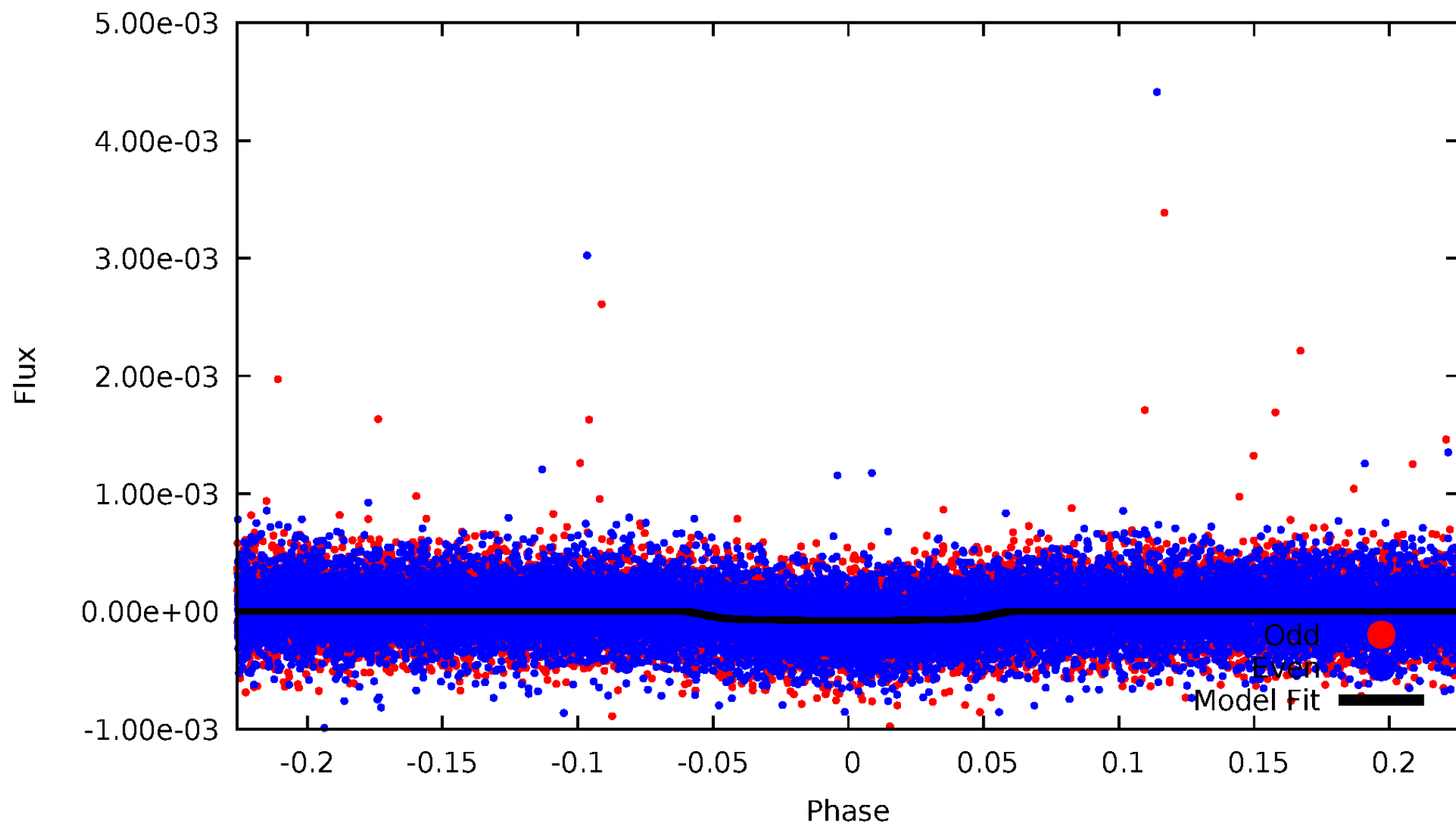


TCE 004677282-01



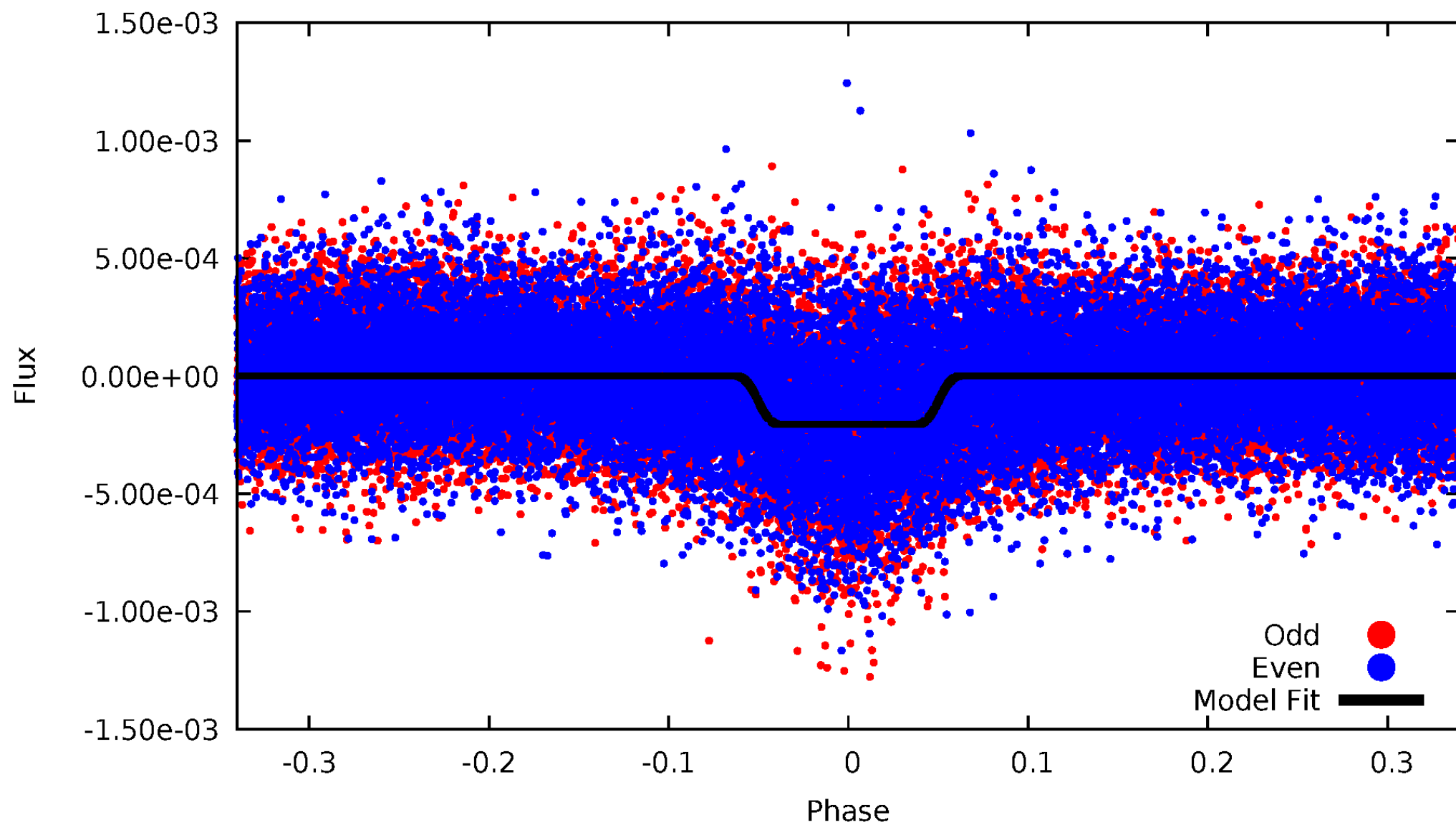
DV Odd/Even

TCE 004677282-01

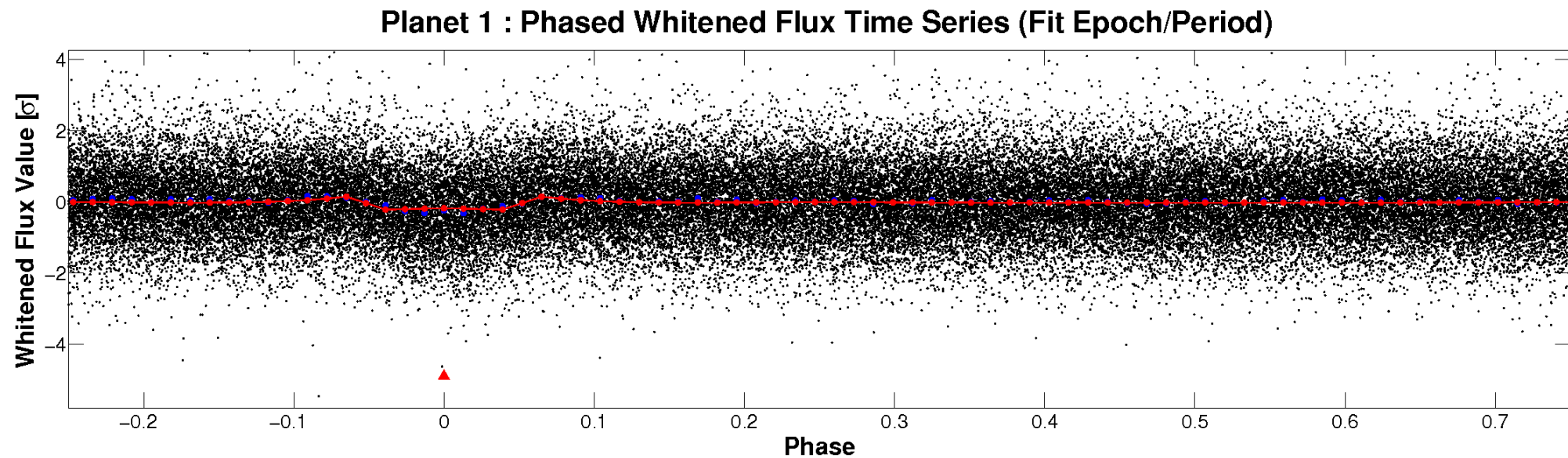
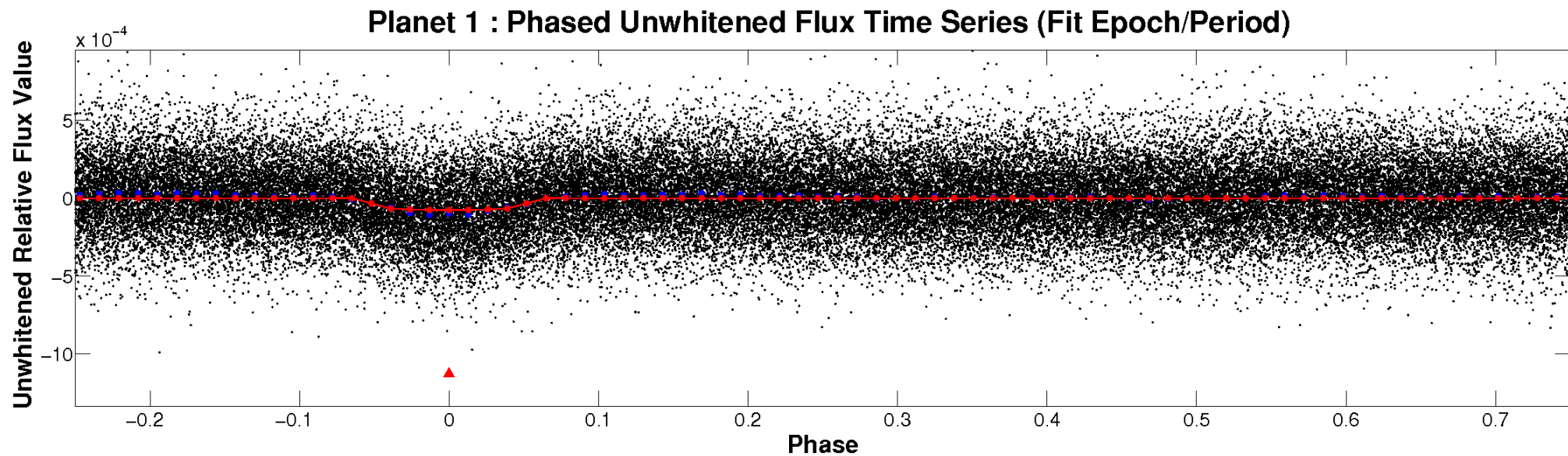


ALT Odd/Even

TCE 004677282-01

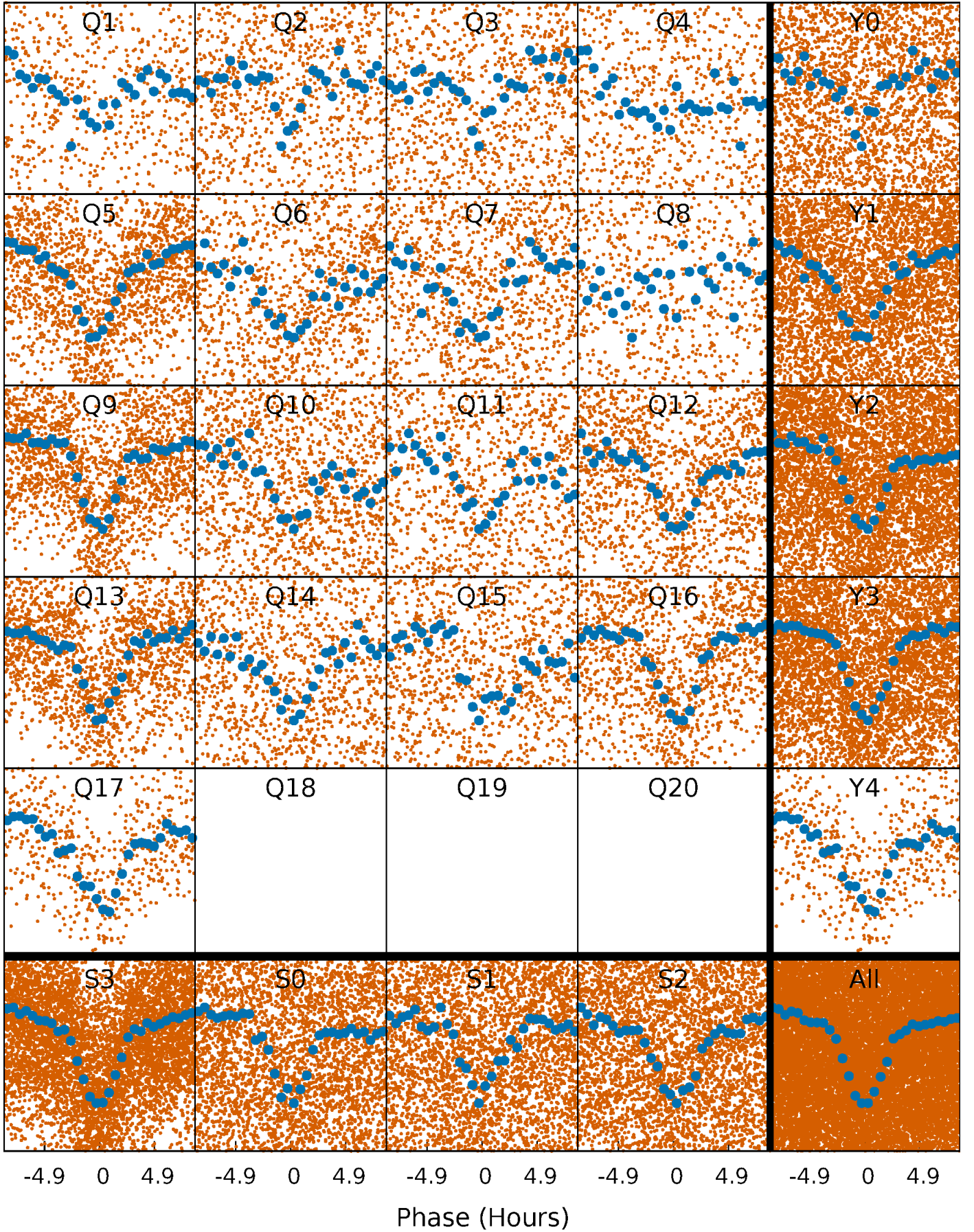


Non-Whitened Vs. Whitened Light Curve



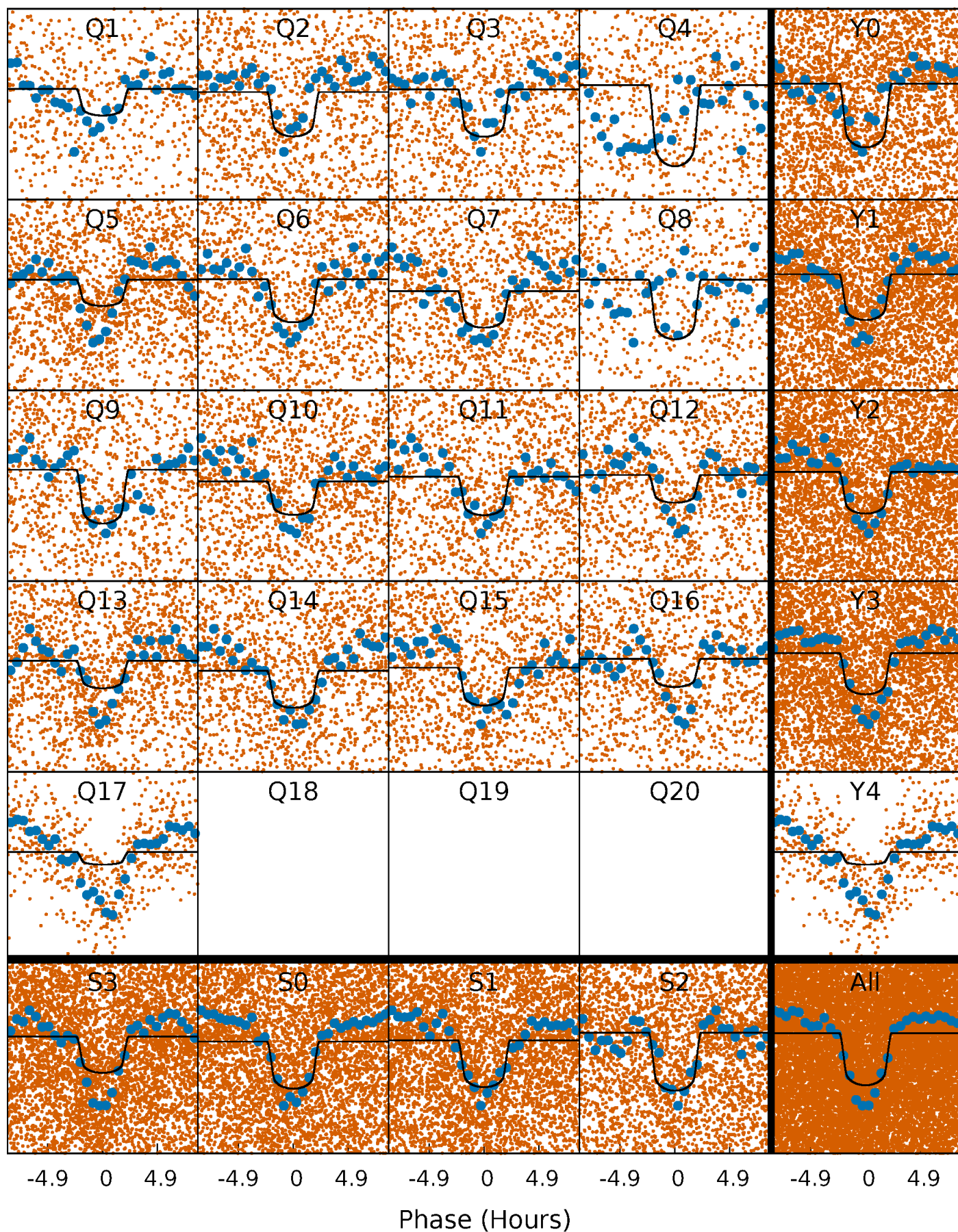
PDC Quarter-Phased Transit Curves

TCE 004677282-01 P= 1.572130 Days $T_0=131.801778$ (BKJD)



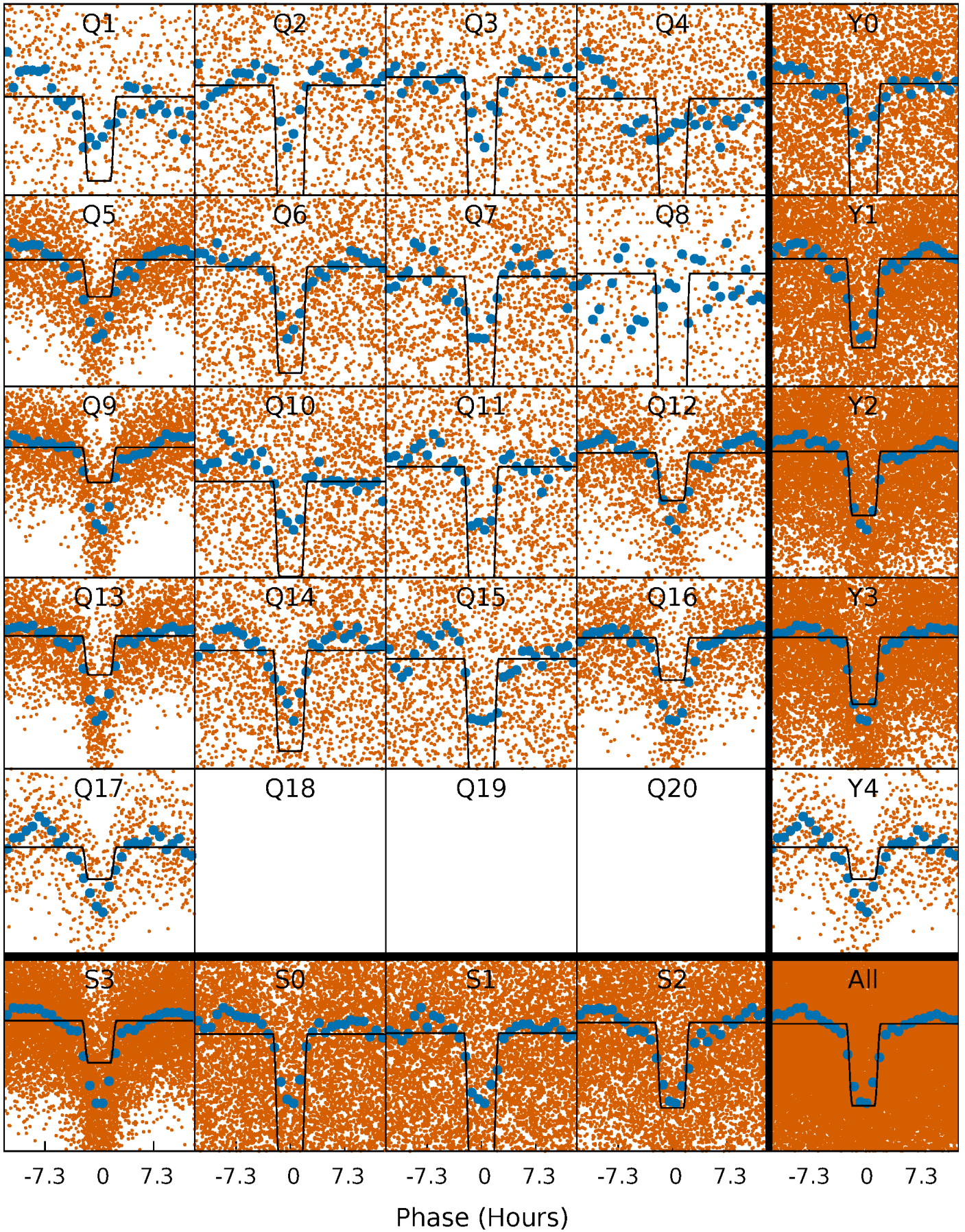
DV Quarter-Phased Transit Curves

TCE 004677282-01 P= 1.572130 Days $T_0=131.801778$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

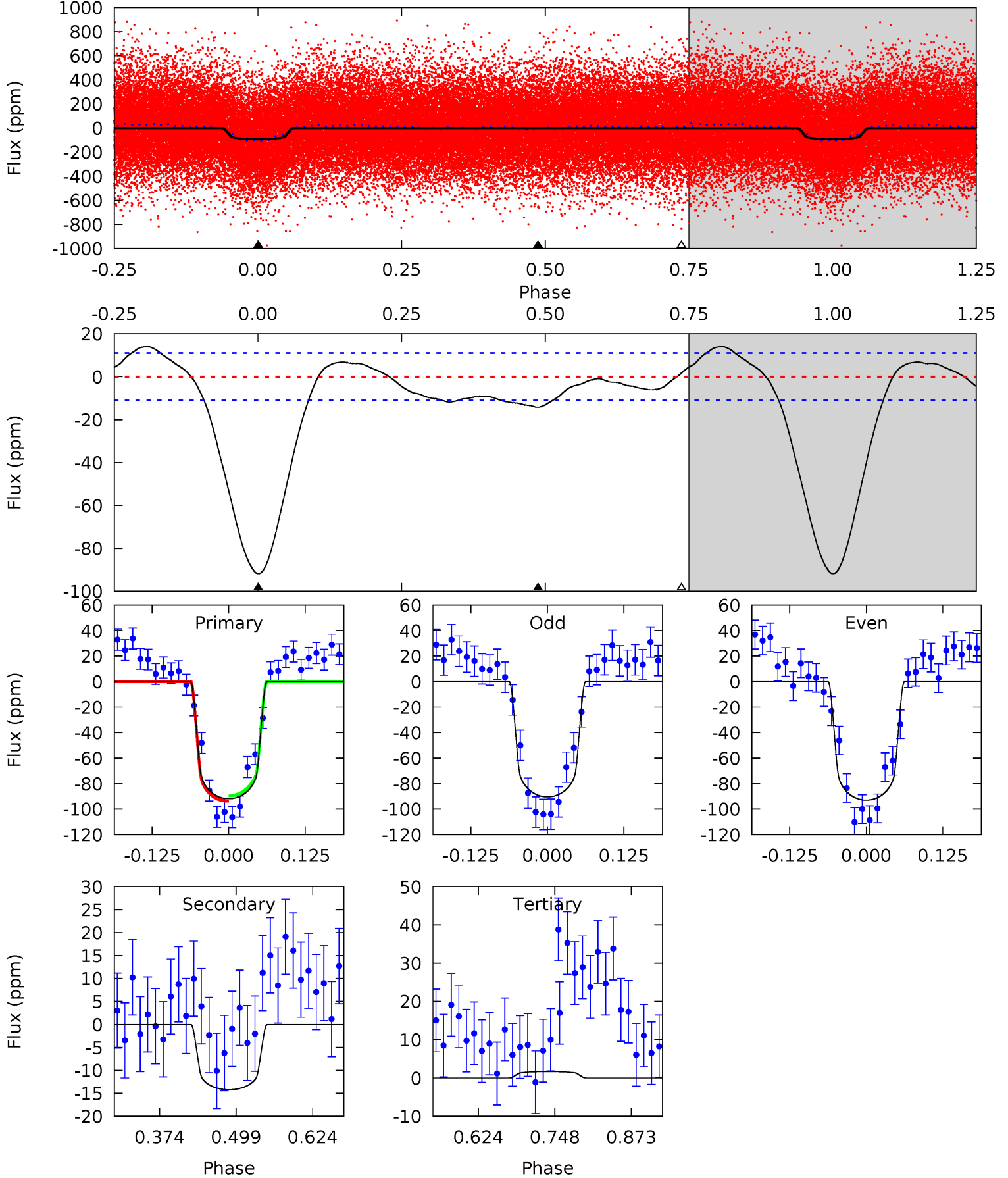
TCE 004677282-01 P= 1.572160 Days $T_0=131.786121$ (BKJD)



DV Model-Shift Uniqueness Test

004677282-01, P = 1.572130 Days, E = 130.229648 Days

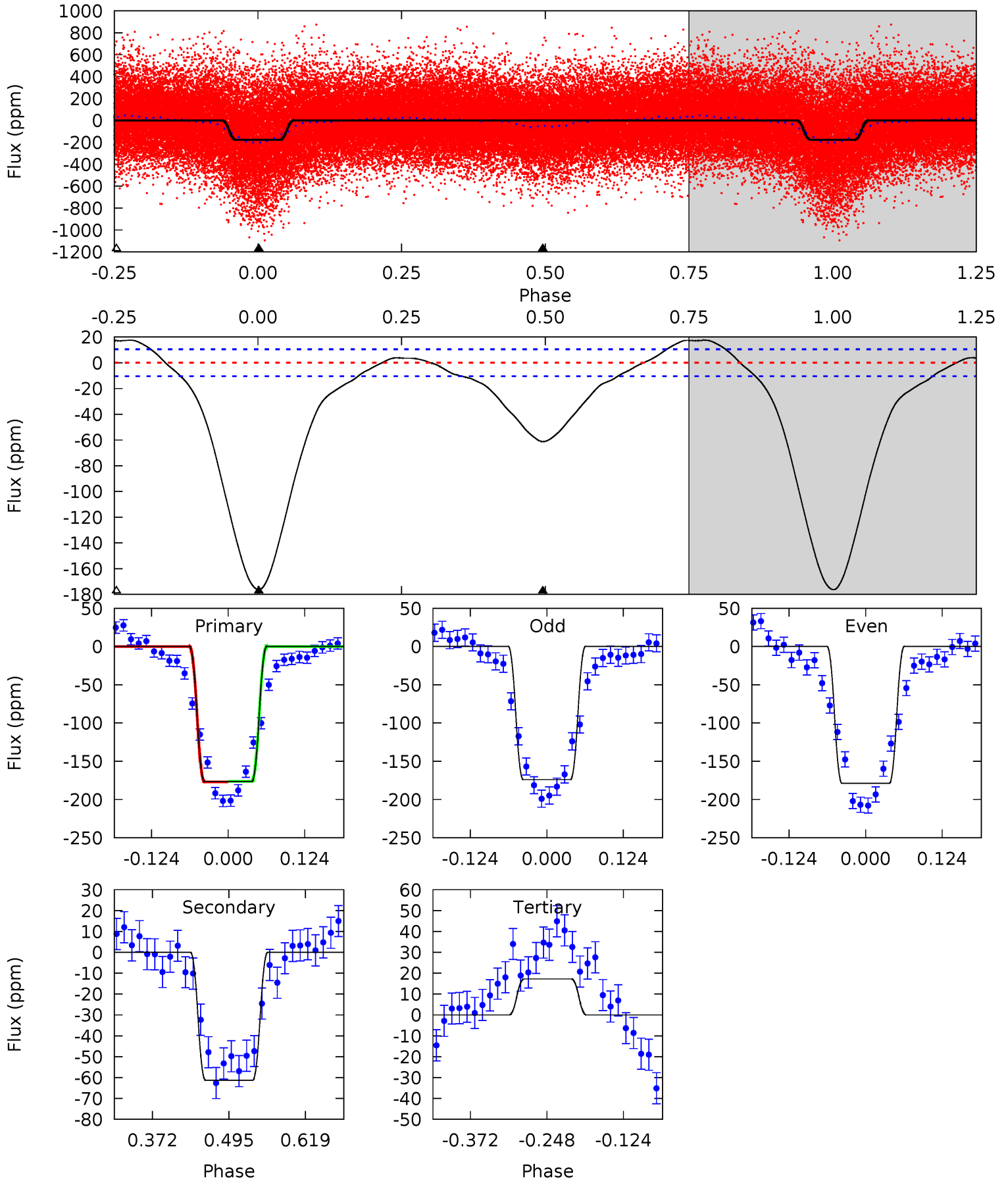
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
37.5	5.80	-0.68	0	4.52	1.54	3.08	38.2	37.5	6.48	5.80	0.52	1.05	0.13	0.85



Alt Model-Shift Uniqueness Test

004677282-01, P = 1.572160 Days, E = 130.213961 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
76.5	26.6	-7.48	0	4.52	1.54	4.54	84.0	76.5	34.1	26.6	1.05	1.11	0.09	0.17



Stellar Parameters For KIC 004677282

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6622^{+180}_{-200}	$3.421^{+0.425}_{-0.075}$	$-0.400^{+0.400}_{-0.300}$	$4.315^{+0.516}_{-1.934}$	$1.789^{+0.130}_{-0.486}$	$0.031^{+0.121}_{-0.008}$
	+3%/-3%	+12%/-2%	+100%/-75%	+12%/-45%	+7%/-27%	+386%/-24%
Source	PHO1	FLK73	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 004677282-01 / KOI 2766.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-14 ± 2	$4.15^{+0.81}_{-1.03}$	4609^{+274}_{-539}	3627^{+535}_{-1051}	$0.463^{+0.314}_{-0.151}$
Alt.	-61 ± 2	$6.38^{+1.00}_{-1.58}$	4614^{+268}_{-517}	4561^{+272}_{-275}	$0.852^{+0.546}_{-0.194}$

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 $A_{obs} \gg 1.0$

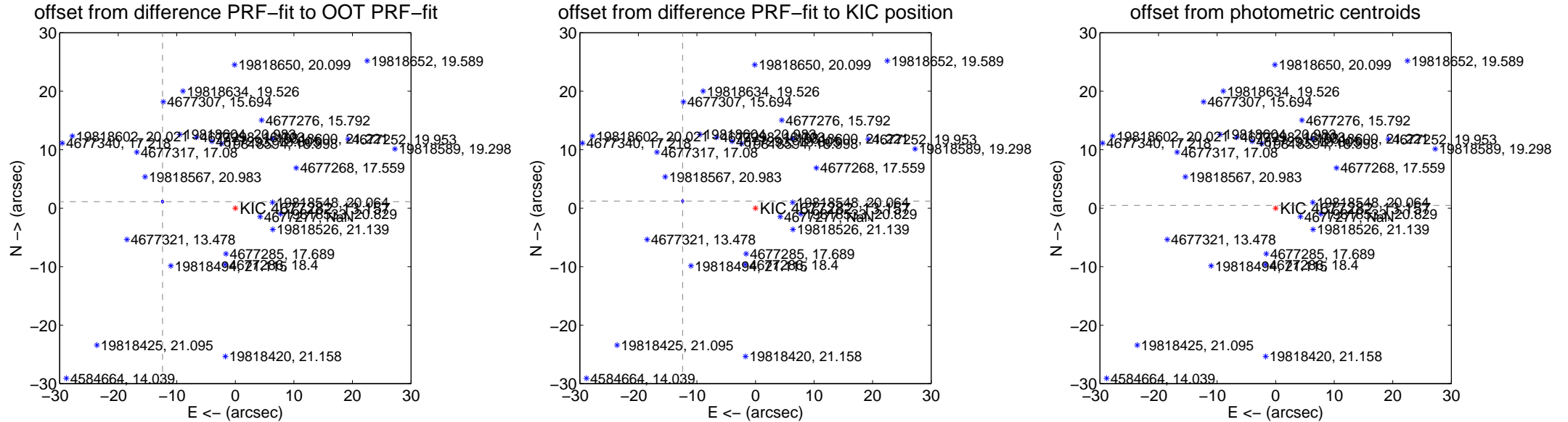
DV Centroid Data

Supplemental centroid analysis for 004677282-01. Kepler magnitude: 13.16. Transit SNR 17.16

There are 5 quarters with good PRF difference image offsets

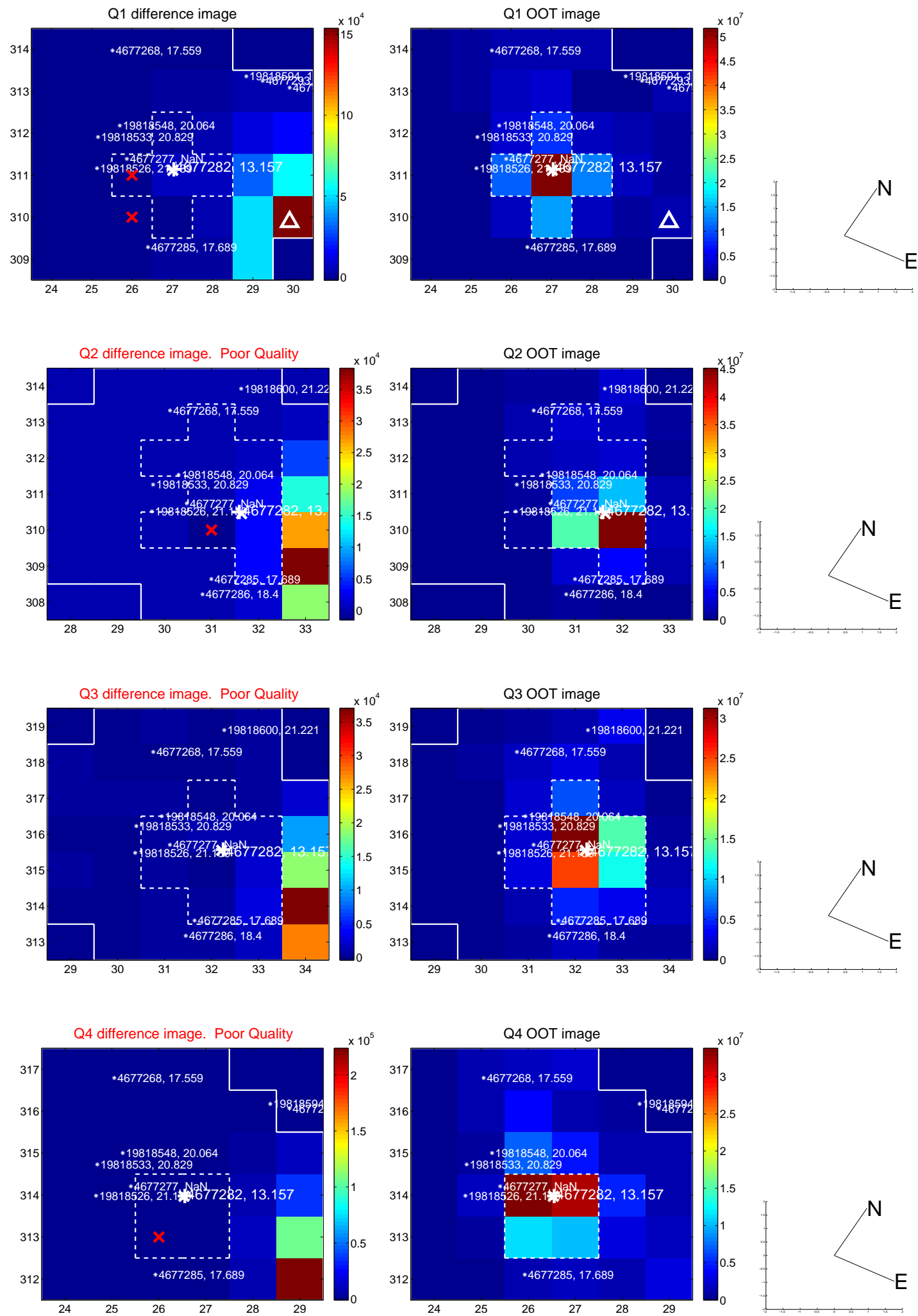
The direct PRF centroid is offset from the target star catalog position by about 0.13 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	12.476 \pm 0.072	174.29	12.426 \pm 0.072	1.114 \pm 0.067
PRF-fit source offset from KIC position	12.499 \pm 0.071	176.70	12.440 \pm 0.071	1.209 \pm 0.068
photometric centroid source offset	60.61 \pm 0.51	119.71	60.61 \pm 0.51	0.47 \pm 0.37

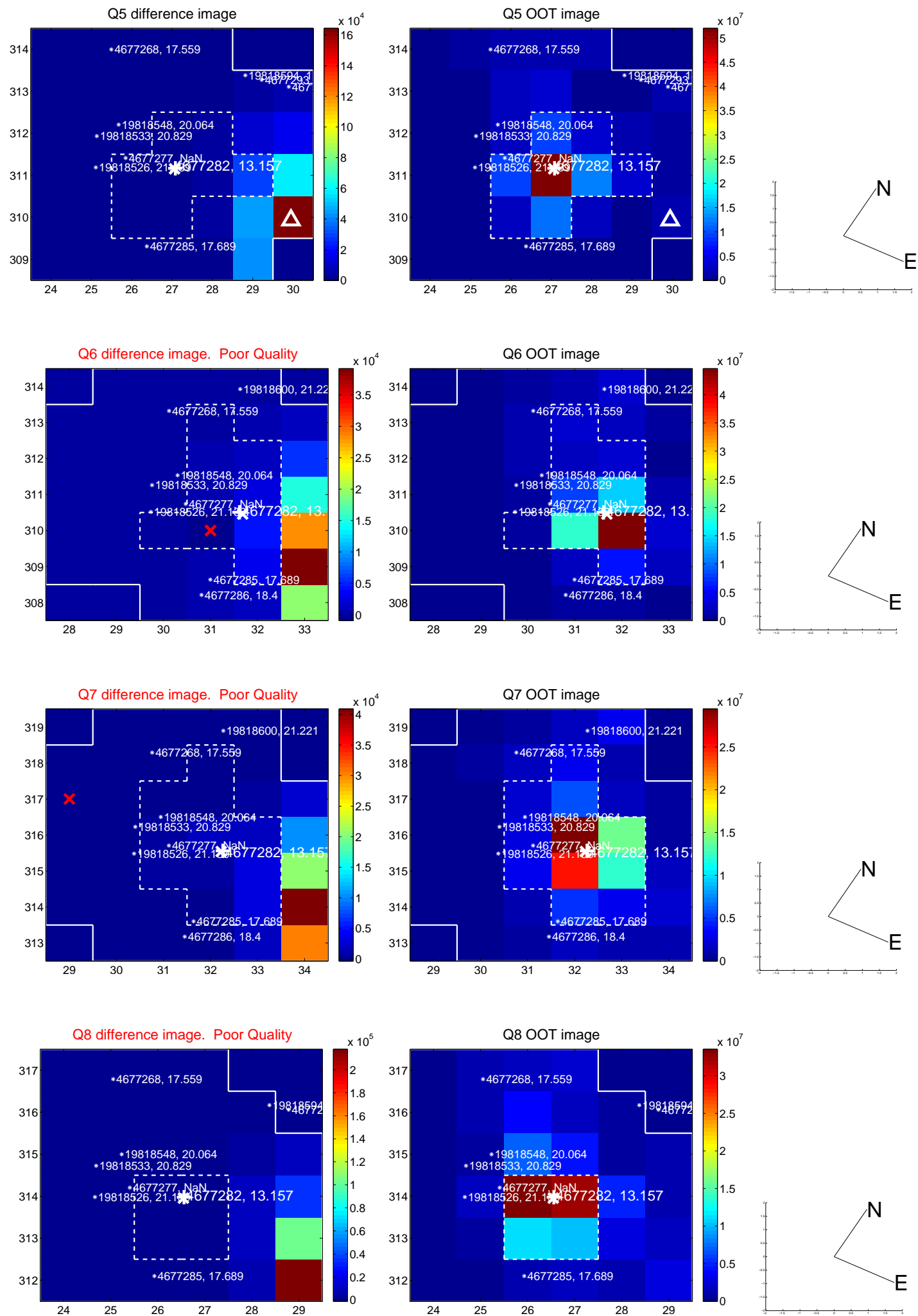


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

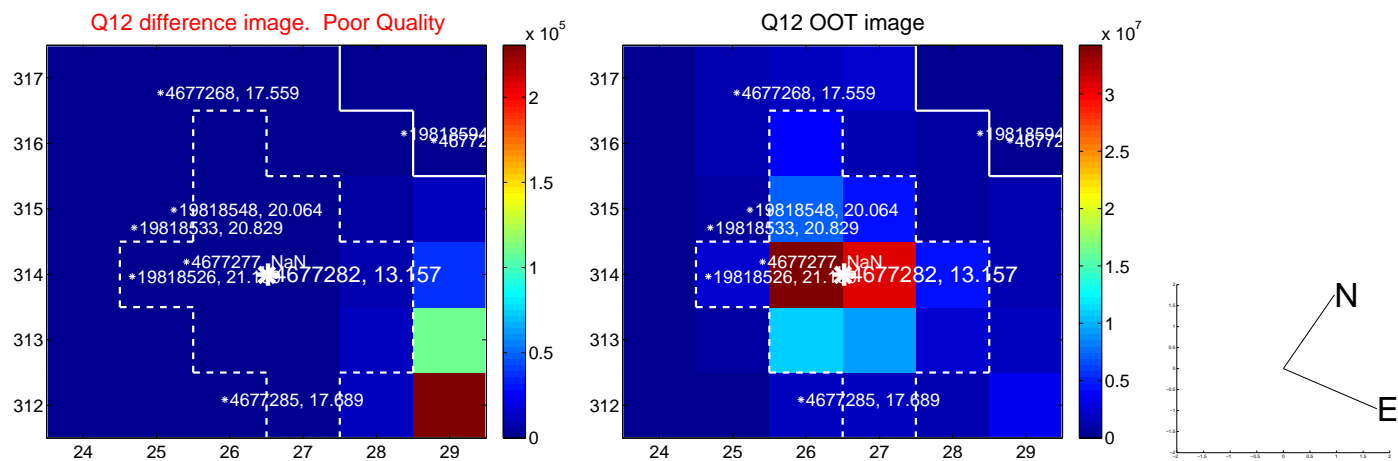
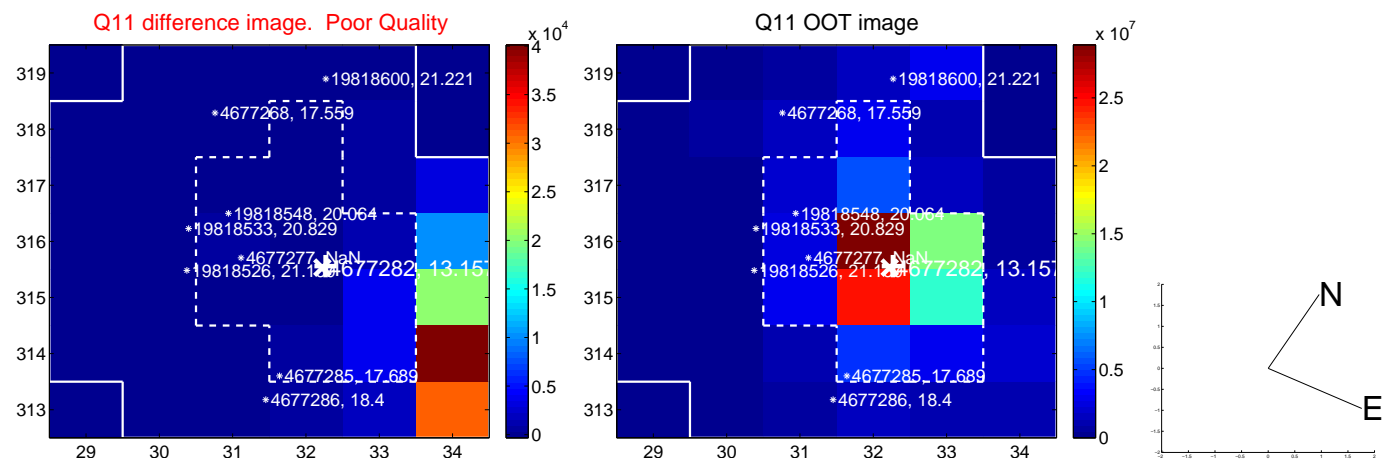
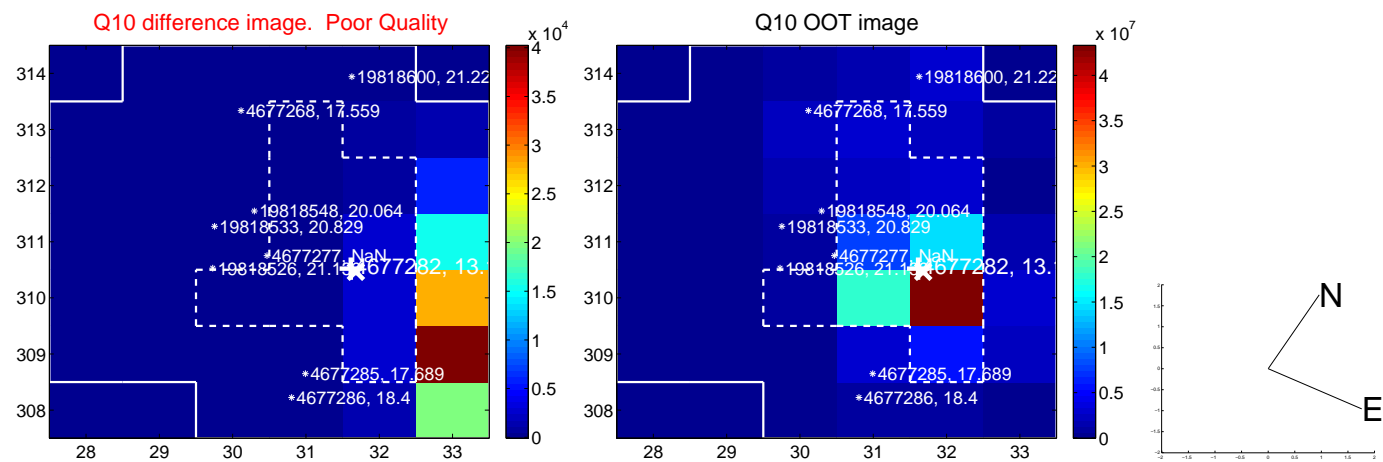
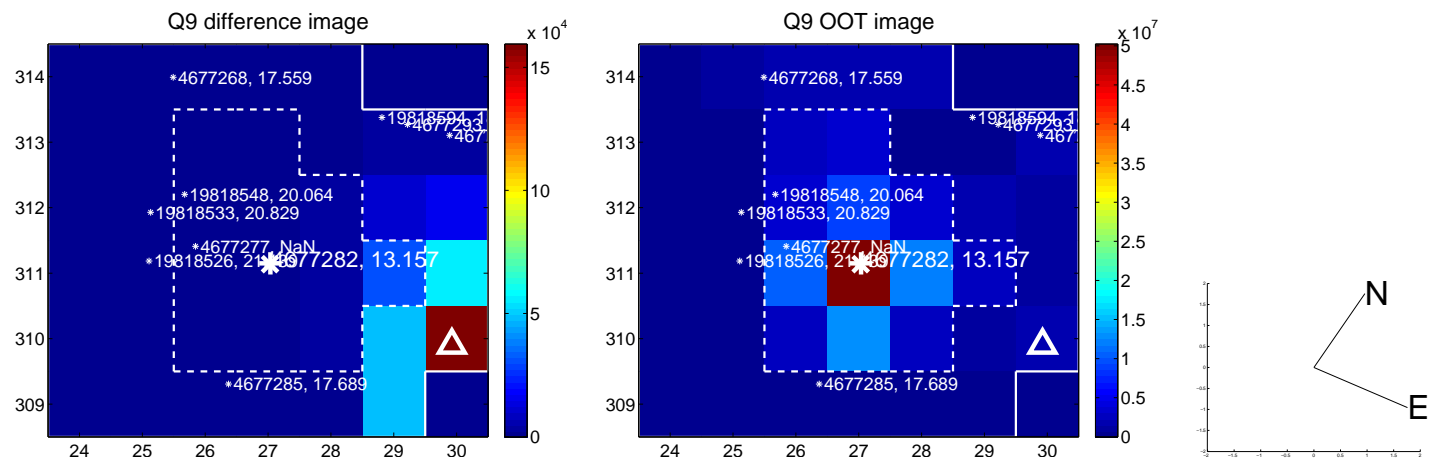
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



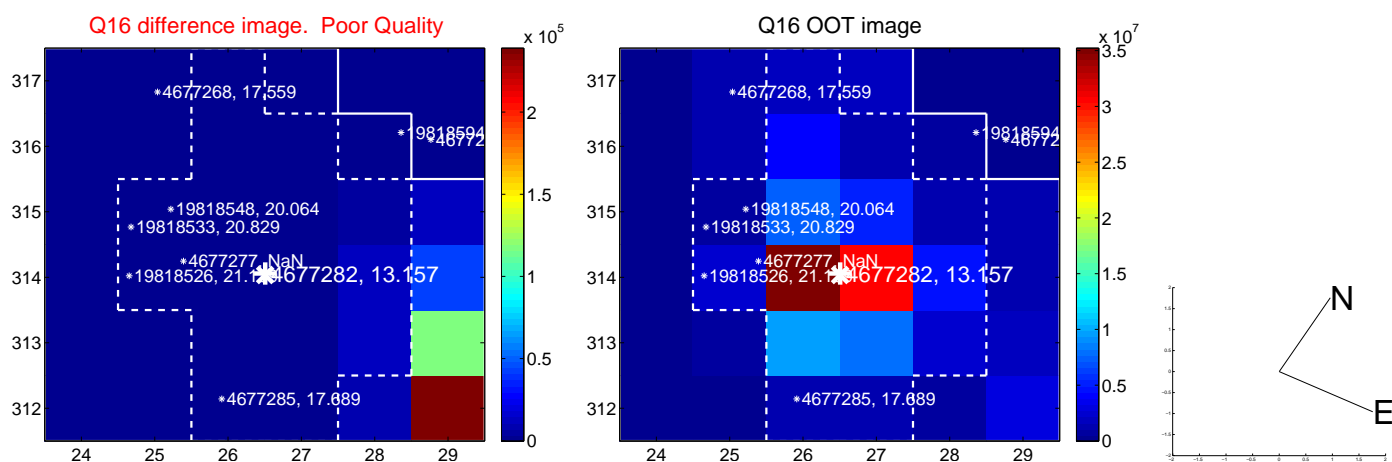
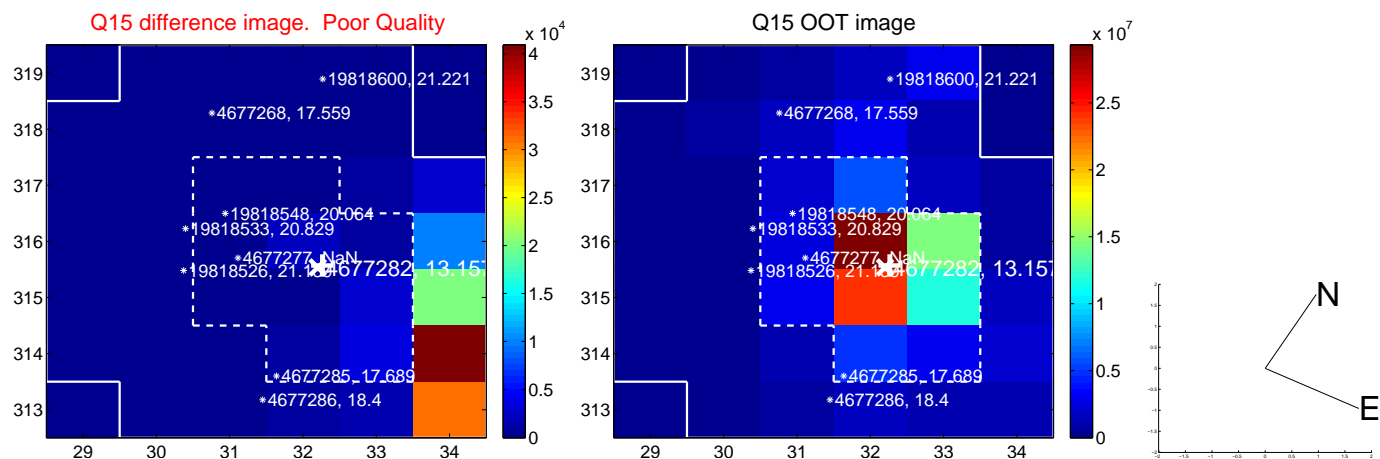
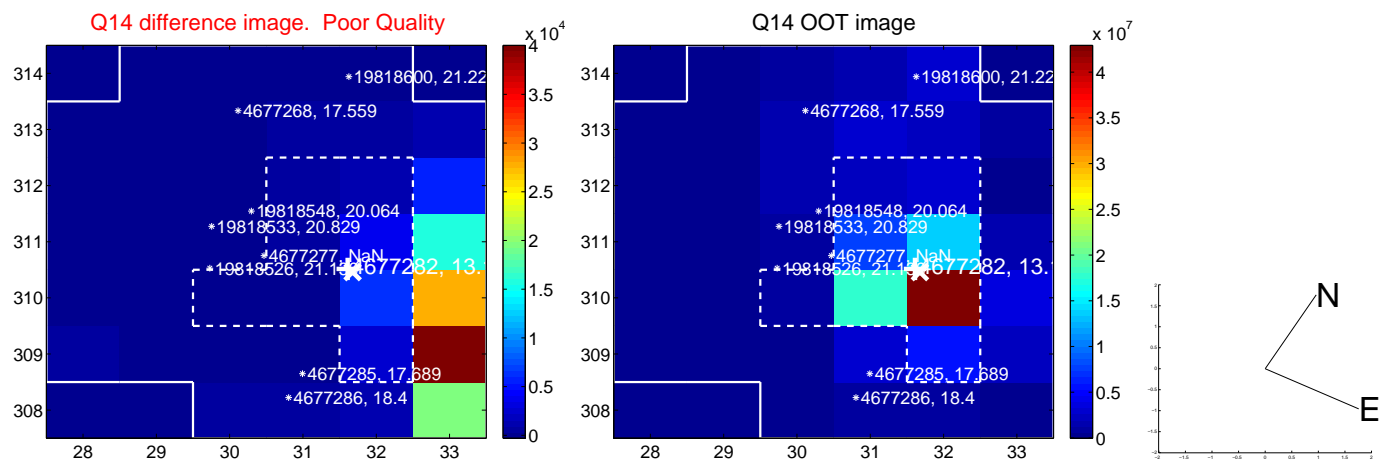
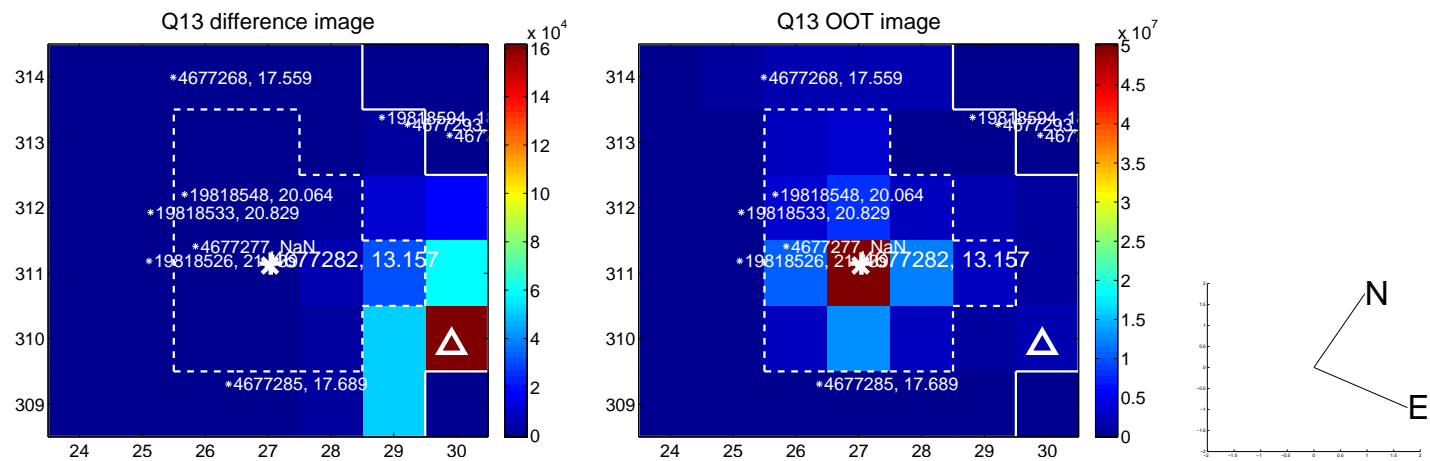
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



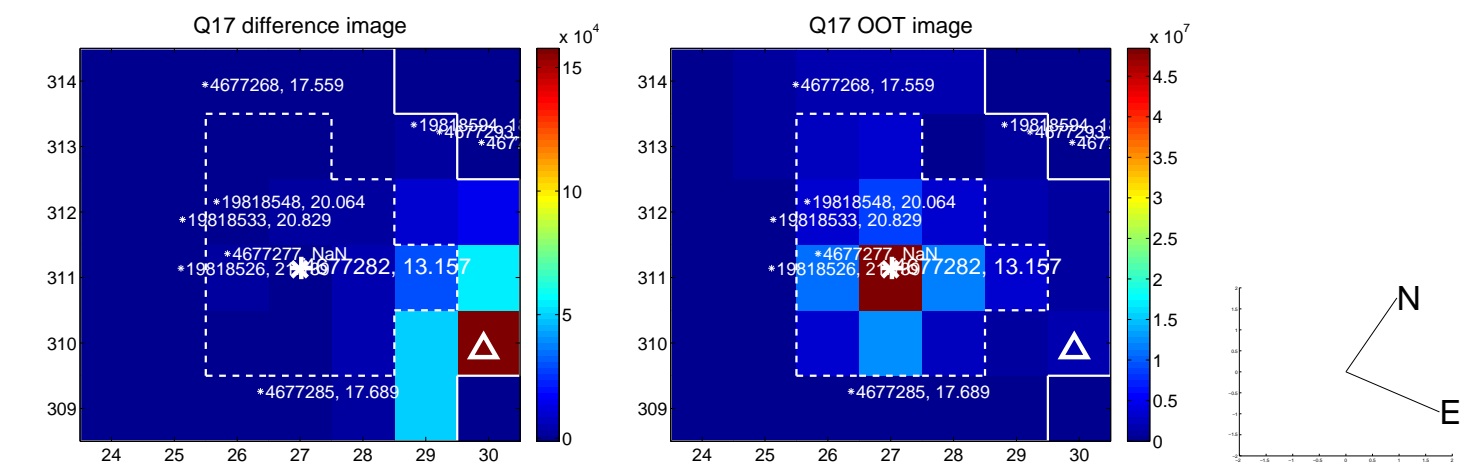
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



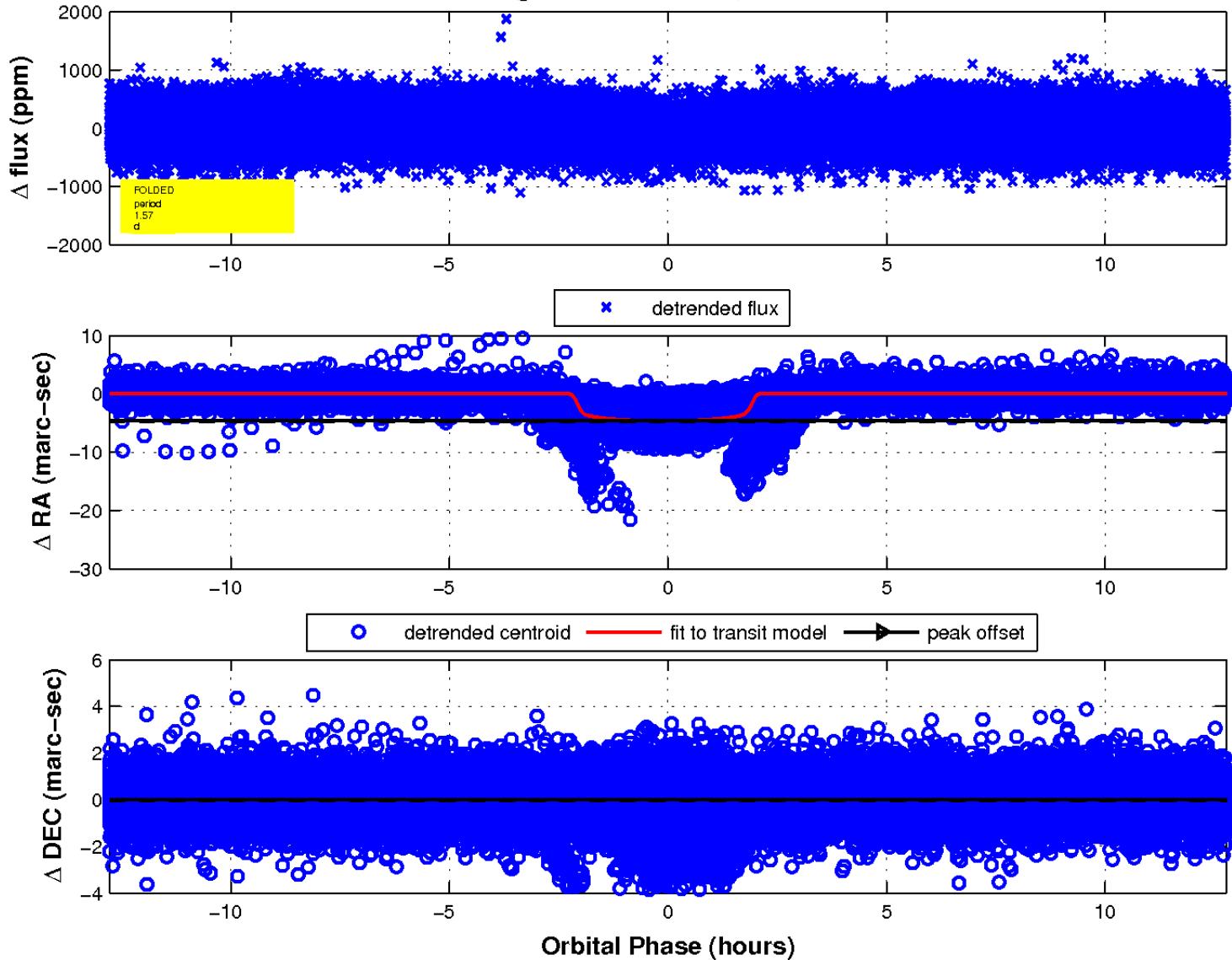
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white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

