

KIC 007281699

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 _⊕)
007281699-01	OBS	6857.01	0.566802	131.834471	65.1	4.665	8.7	10.5	0.85	5603	0.72	3666.48

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007281699-01	OBS	FP	0.00	1	0	0	1	LPP_DV—CENT_FEW_DIFFS—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.

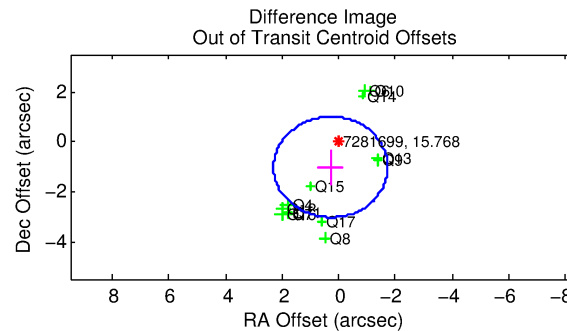
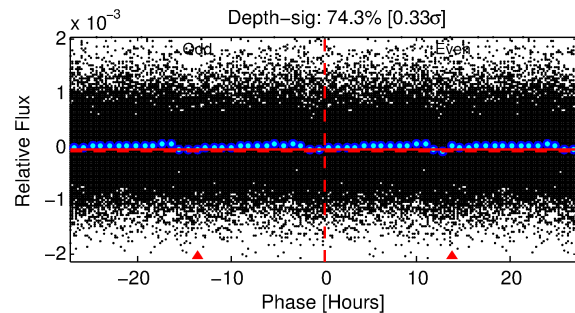
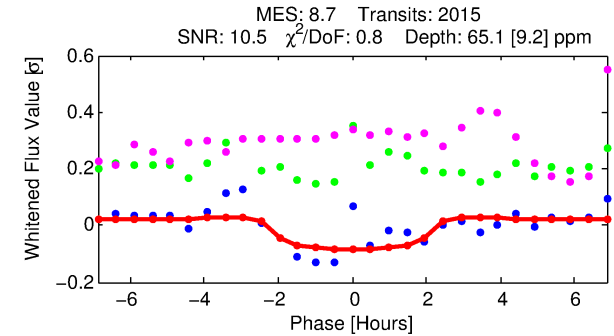
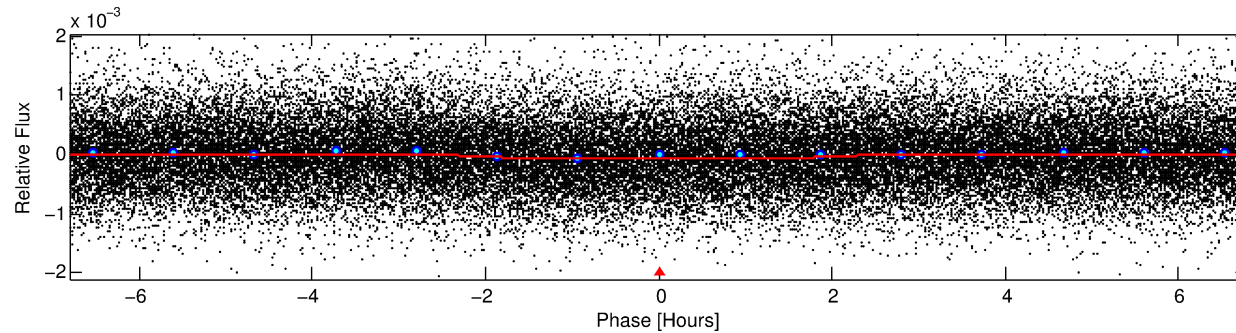
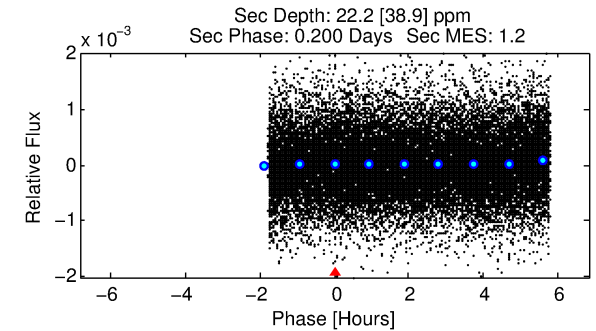
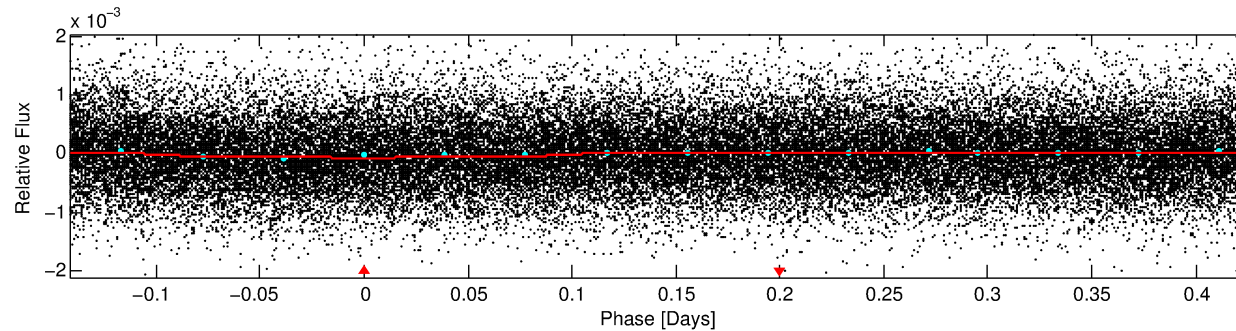
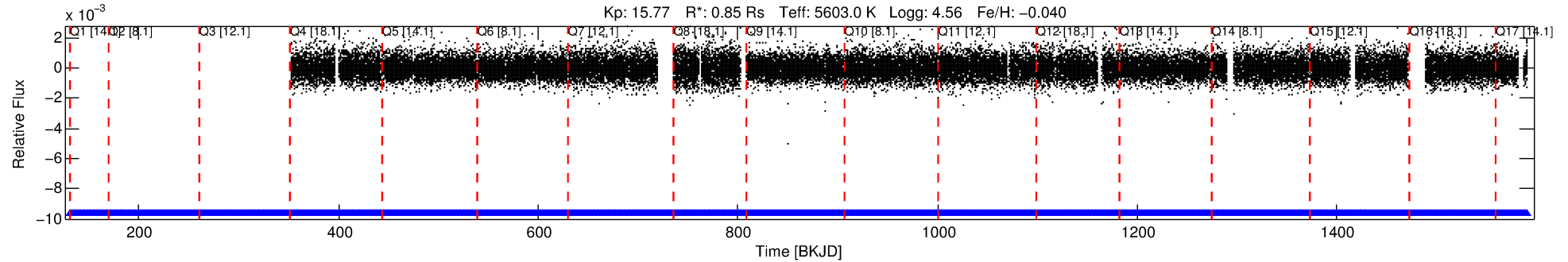
Ephemeris Match Information For 007281699-01

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
007281699-01	7281699	RR-Lyr-pri	7198959	1:1	910.7	36	226	7.86	15.77	9589.20	Direct-PRF	0	0.80	18.28

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: 7281699 Candidate: 1 of 1 Period: 0.567 d
KOI: K06857.01 Corr: 0.866



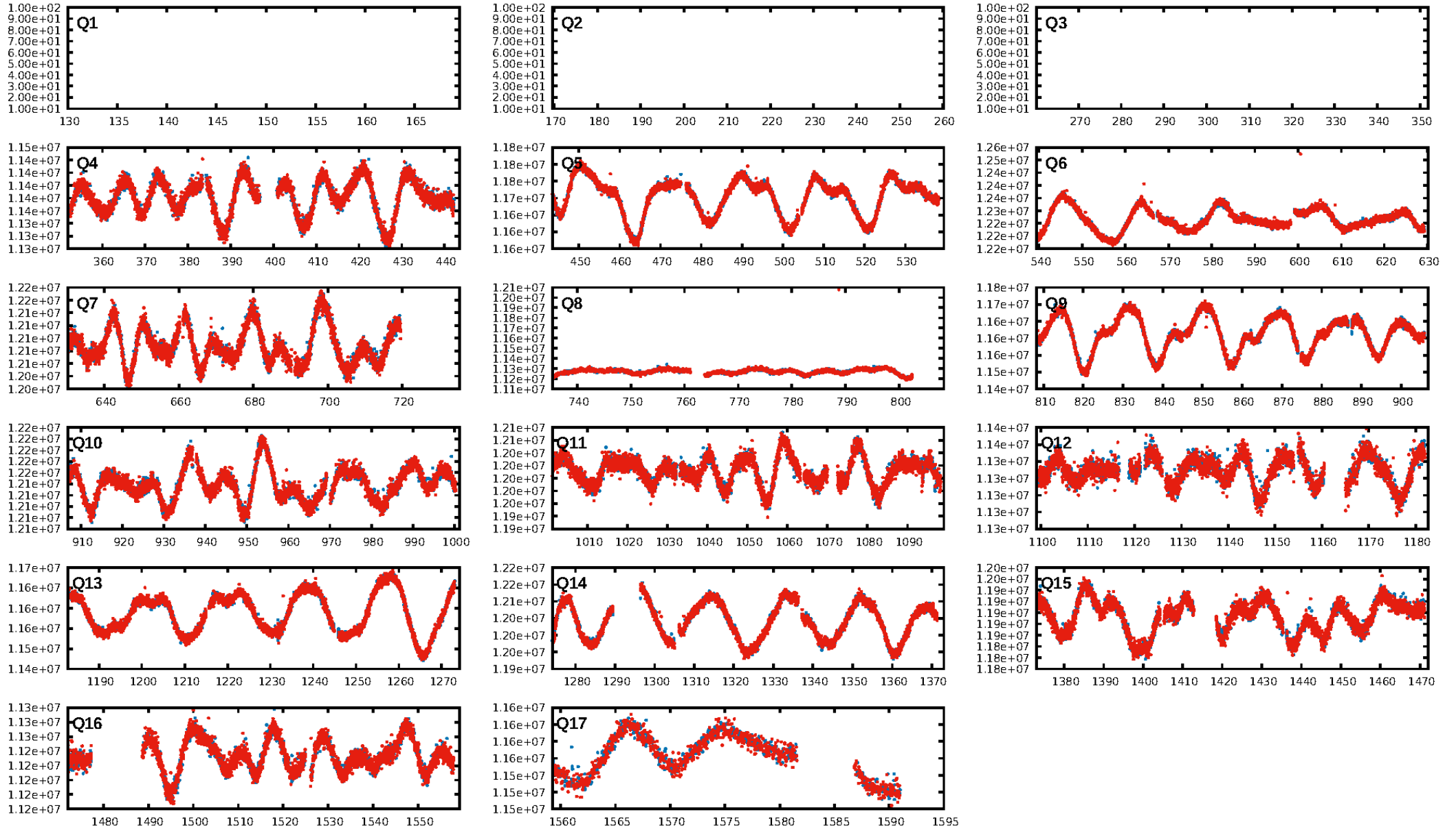
DV Fit Results:

Period = 0.56680 [0.00001] d
Epoch = 131.8345 [0.0041] BKJD
Rp/R* = 0.0078 [0.0065]
a/R* = 1.09 [0.57]
b = 0.67 [2.93]
Seff = 3666.48 [1220.16]
Teff = 1984 [165] K
Rp = 0.72 [0.63] Re
a = 0.0131 [0.0027] AU
Ag = 4.03 [9.81] [0.31σ]
Teffp = 4346 [2631] K [0.90σ]

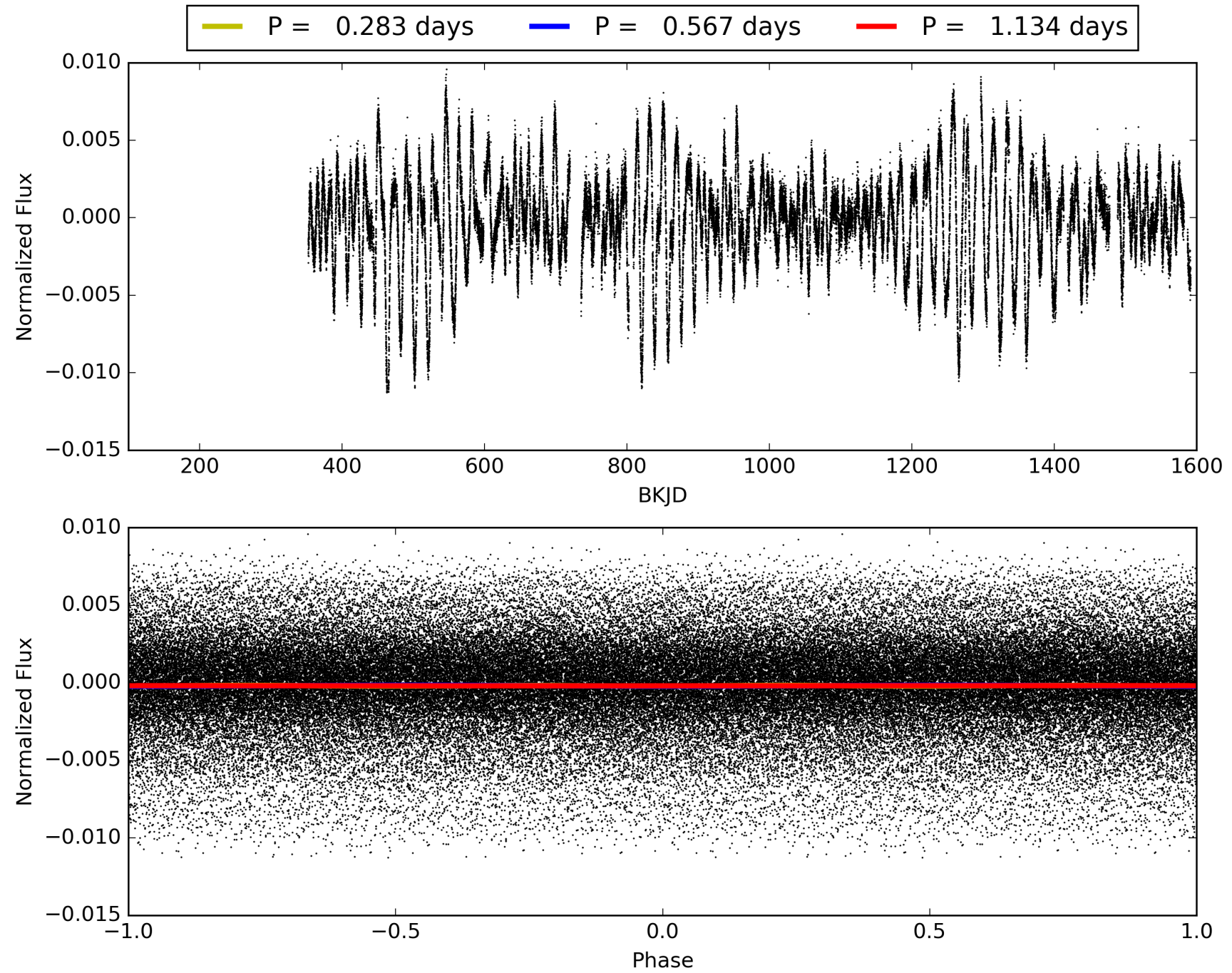
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [1968/1968]
GhostDiagnostic-chr: -0.2538
Centroid-sig: 0.0%
Centroid-so: 3.593 arcsec [3.66σ]
OotOffset-rm: 1.058 arcsec [1.57σ]
KicOffset-rm: 1.028 arcsec [1.56σ]
OotOffset-st: 3/3/4/3 [13]
KicOffset-st: 3/3/4/3 [13]
DiffImageQuality-fgm: 0.54 [7/13]
DiffImageOverlap-fno: 1.00 [14/14]

TCE 007281699-01, PDC Light Curves

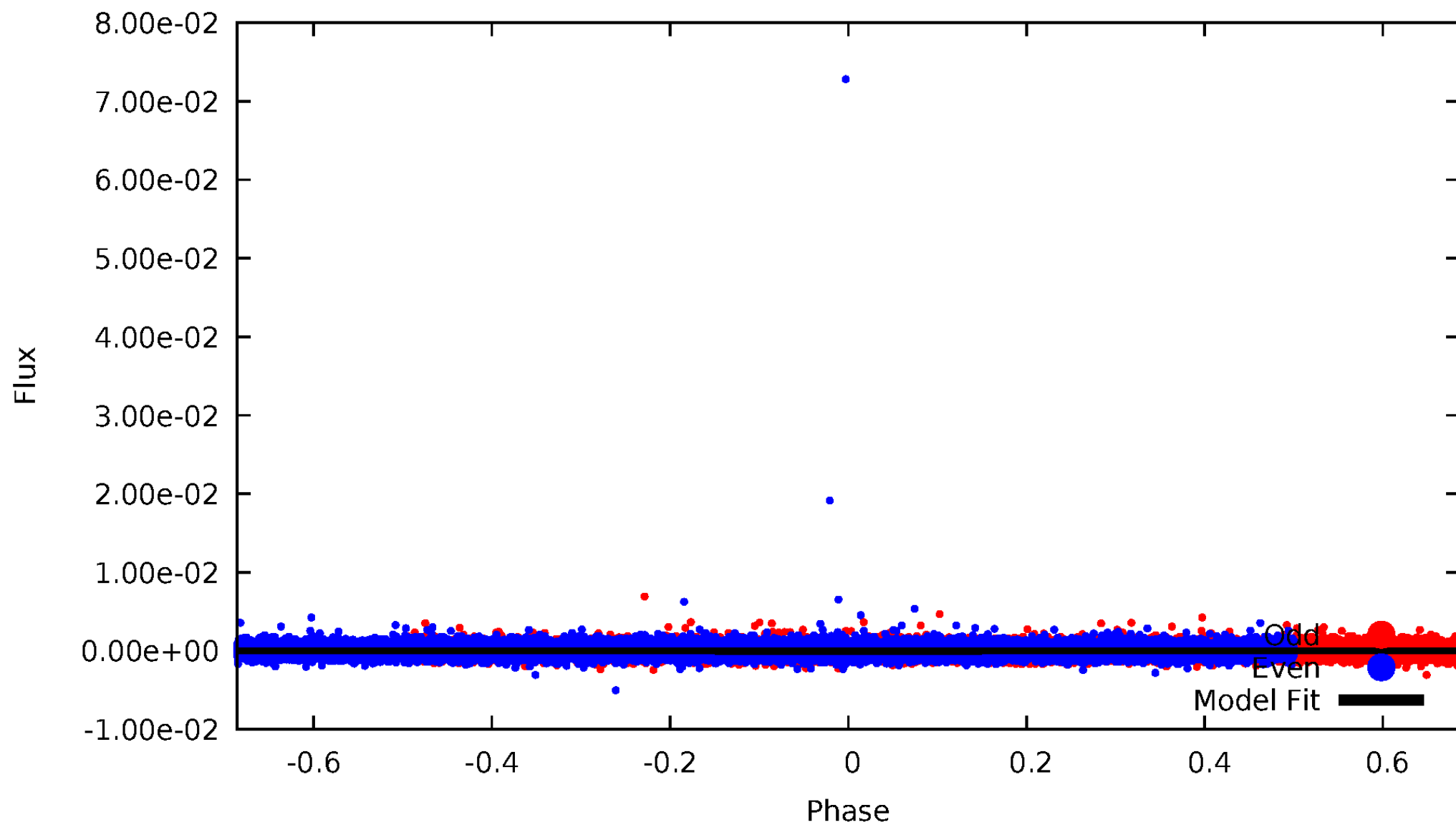


TCE 007281699-01



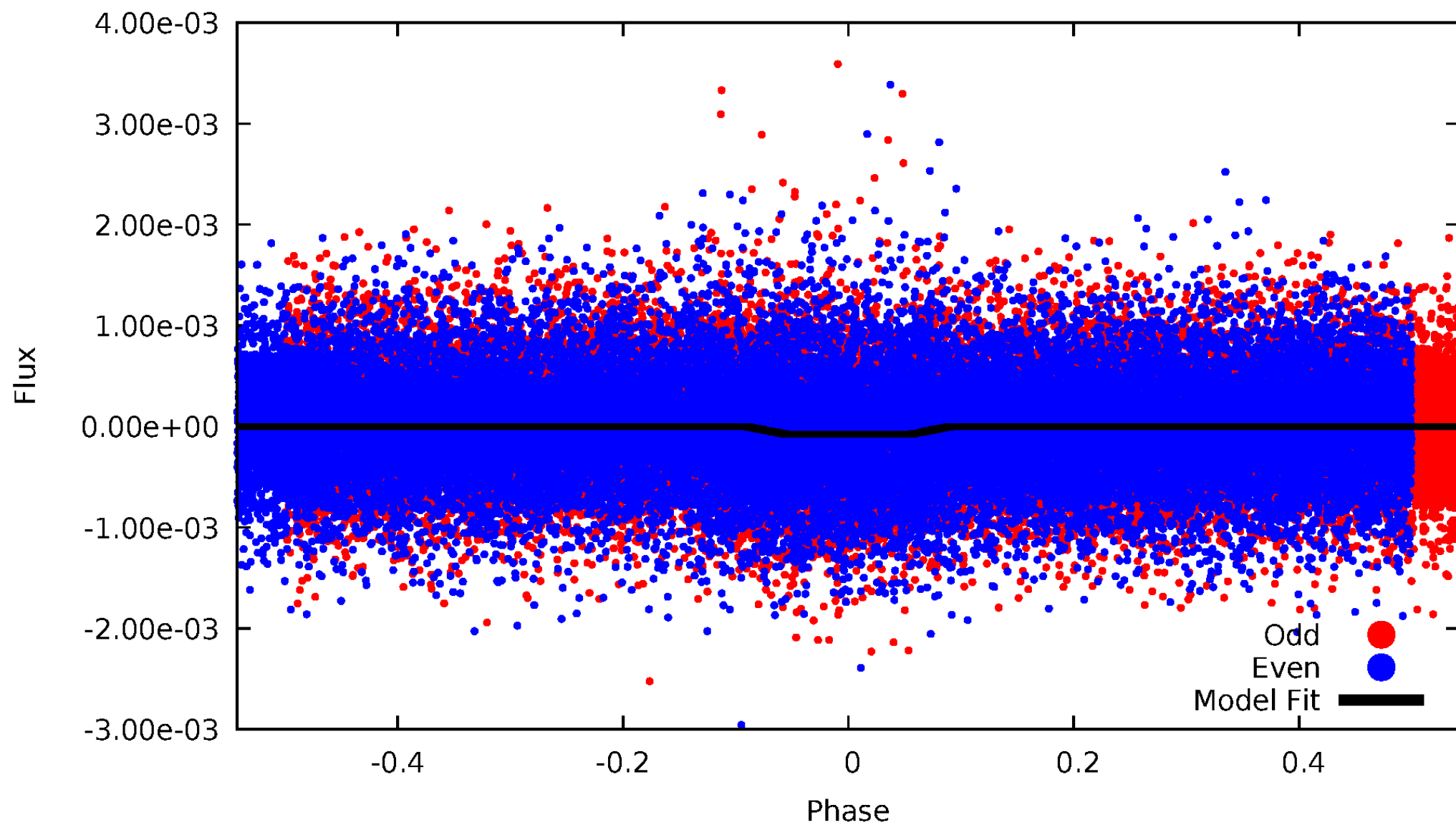
DV Odd/Even

TCE 007281699-01



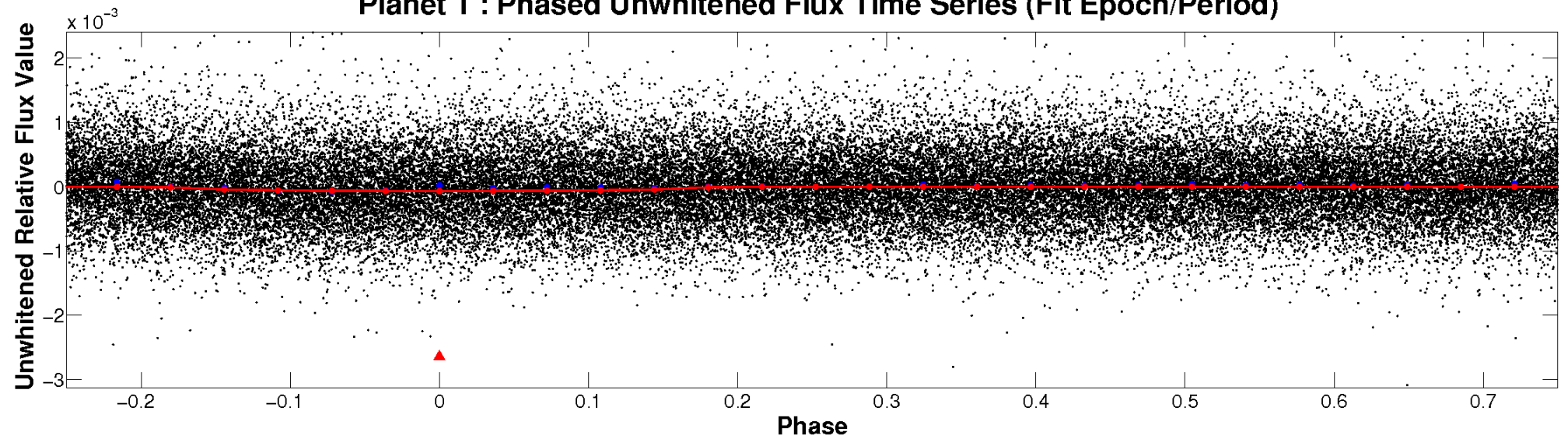
ALT Odd/Even

TCE 007281699-01

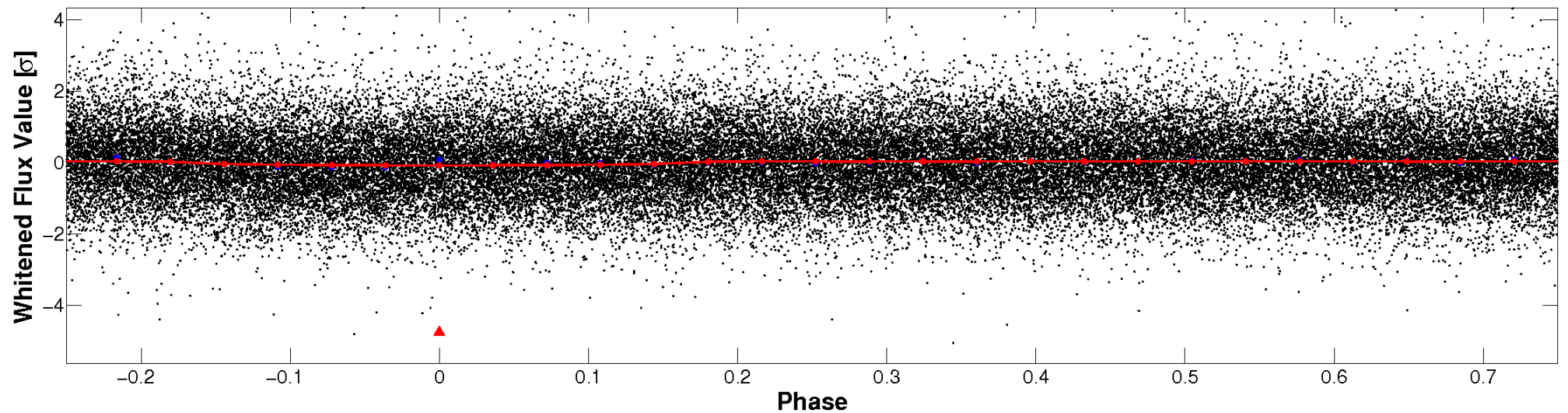


Non-Whitened Vs. Whitened Light Curve

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

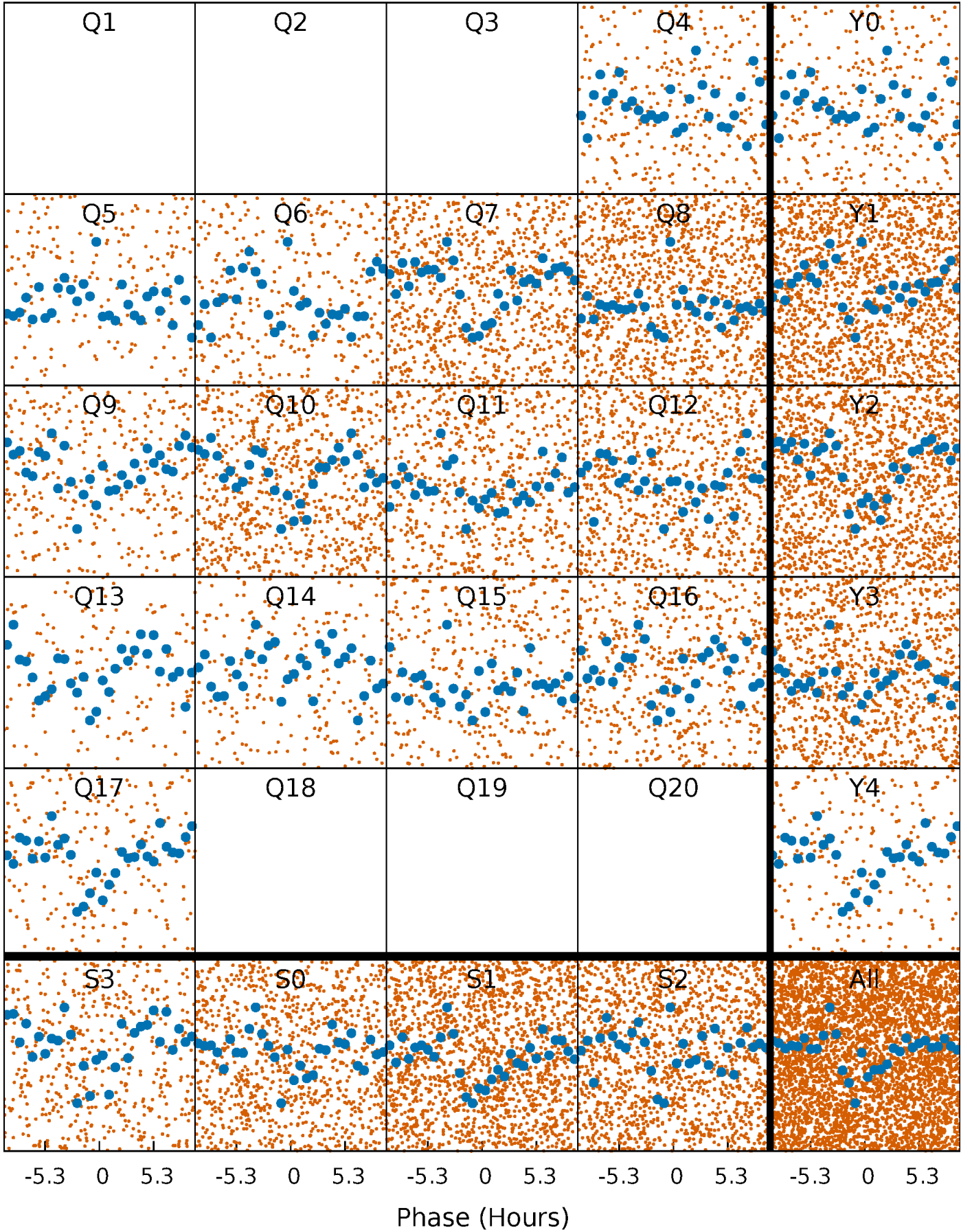


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



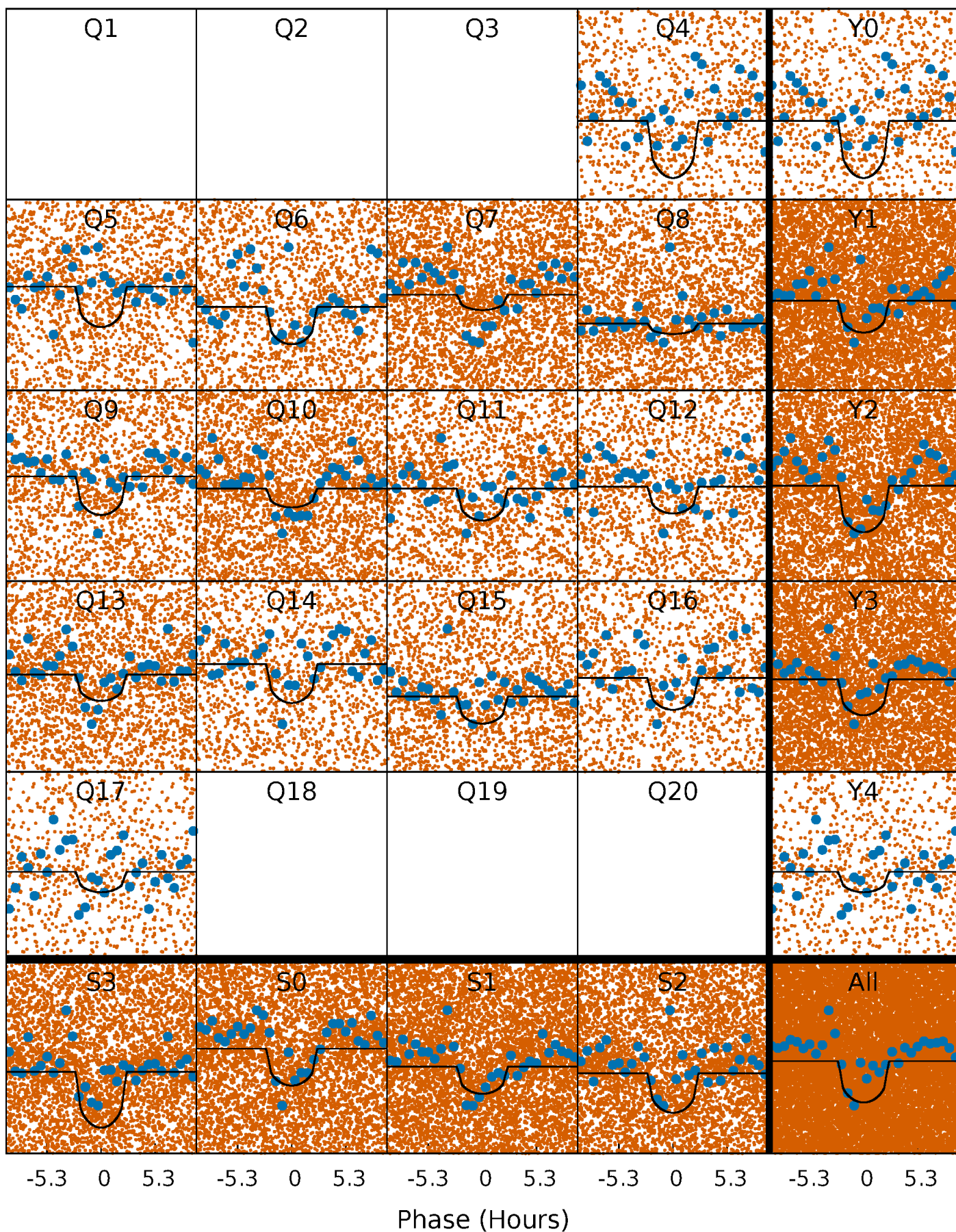
PDC Quarter-Phased Transit Curves

TCE 007281699-01 P= 0.566802 Days $T_0=131.834471$ (BKJD)



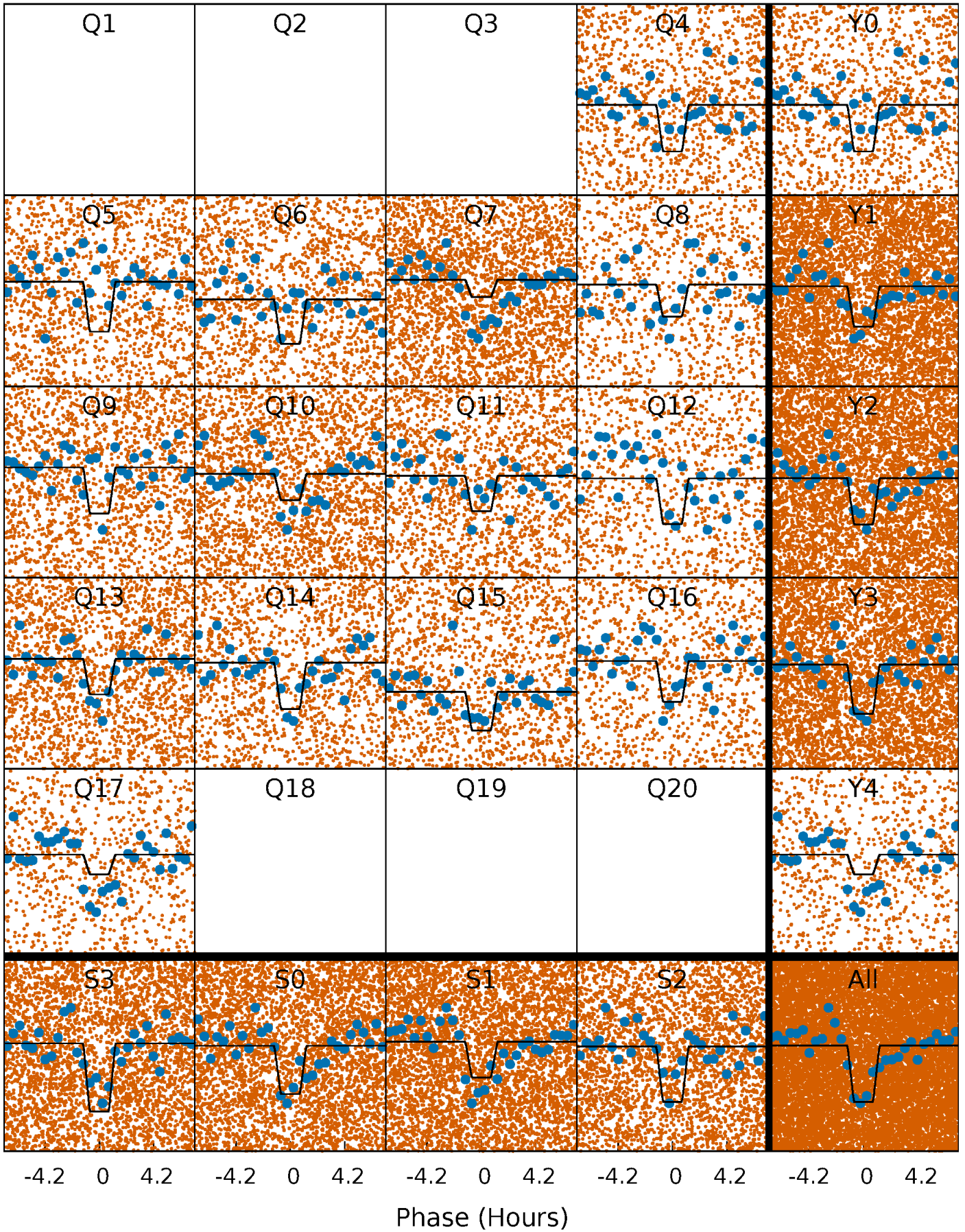
DV Quarter-Phased Transit Curves

TCE 007281699-01 P= 0.566802 Days $T_0=131.834471$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

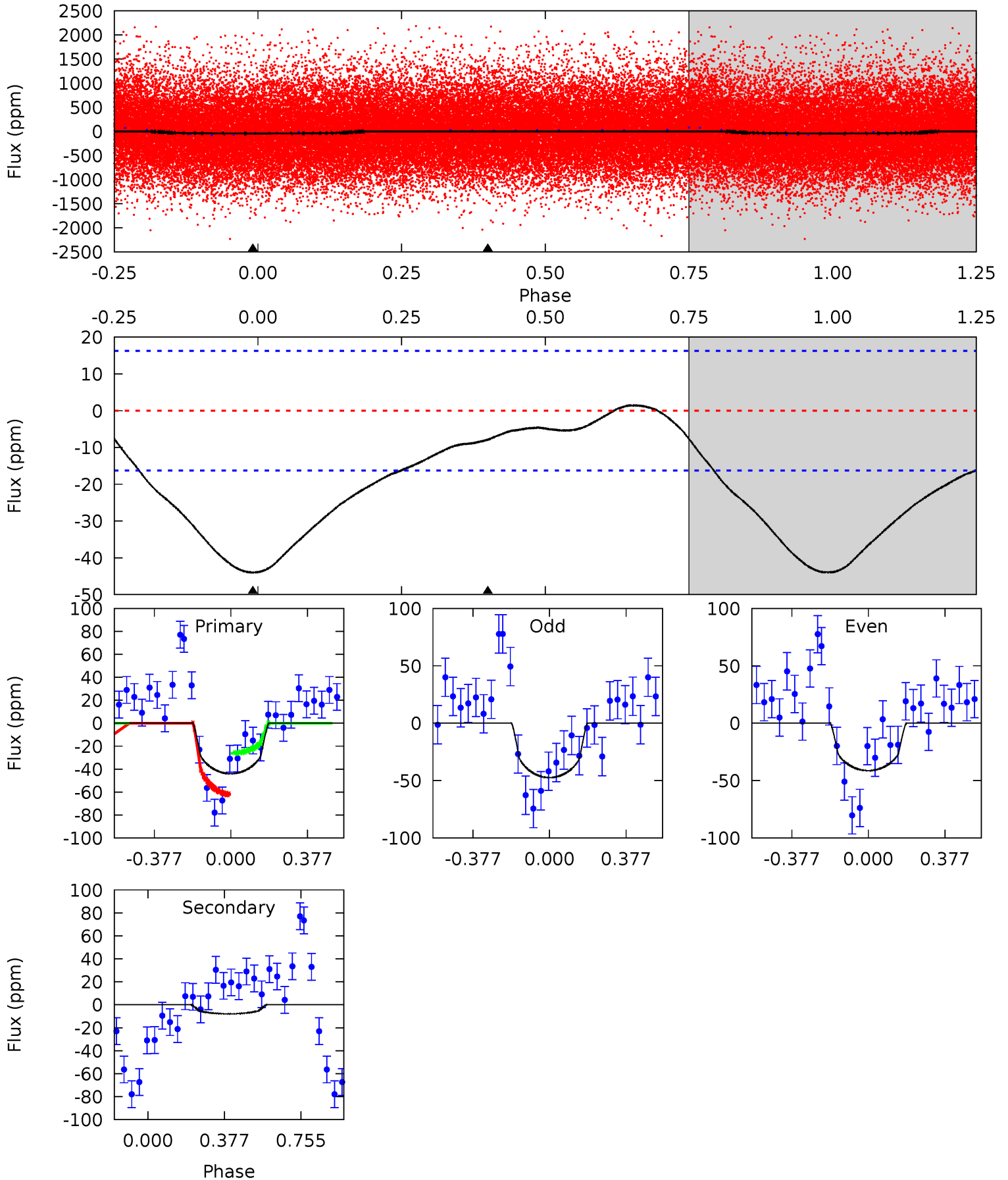
TCE 007281699-01 P= 0.566782 Days $T_0=131.832320$ (BKJD)



DV Model-Shift Uniqueness Test

007281699-01, P = 0.566802 Days, E = 131.834471 Days

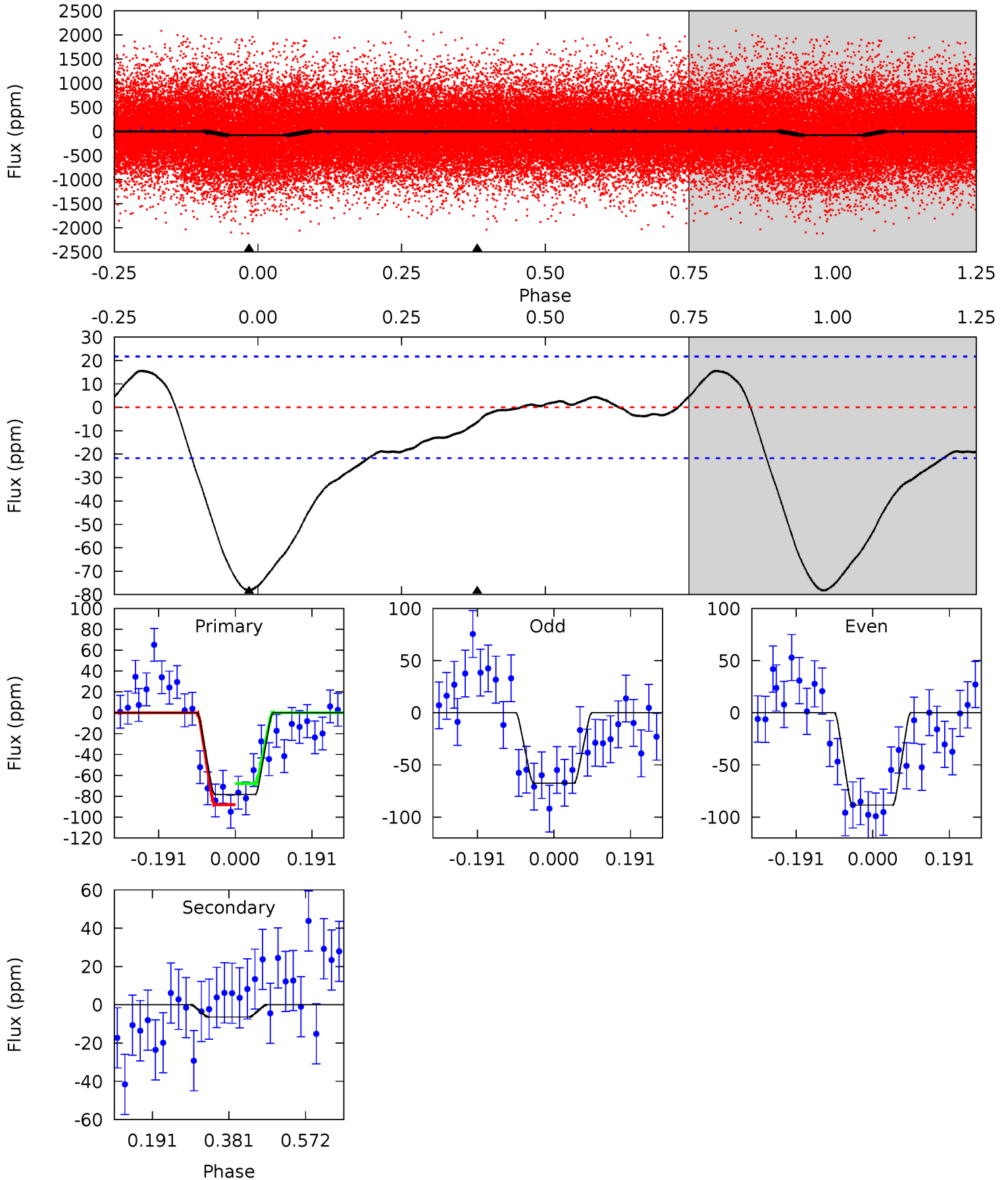
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.6	2.08	0	0	4.28	0.88	0.65	11.6	11.6	2.08	2.08	0.80	0.78	0.03	4.68



Alt Model-Shift Uniqueness Test

007281699-01, P = 0.566782 Days, E = 131.832320 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.0	1.30	0	0	4.43	1.31	1.64	16.0	16.0	1.30	1.30	2.13	0.89	0.17	2.06



Stellar Parameters For KIC 007281699

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5603^{+186}_{-186}	$4.556^{+0.032}_{-0.168}$	$-0.040^{+0.300}_{-0.300}$	$0.846^{+0.207}_{-0.083}$	$0.941^{+0.094}_{-0.115}$	$2.188^{+0.468}_{-0.961}$
	+3%/-3%	+1%/-4%	+750%/-750%	+24%/-10%	+10%/-12%	+21%/-44%
Source	KIC0	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 007281699-01 / KOI 6857.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-8 ± 4	$0.85^{+0.61}_{-0.52}$	2837^{+183}_{-120}	3354^{+1675}_{-5723}	$0.983^{+4.867}_{-0.730}$
Alt.	-6 ± 5	$0.93^{+0.62}_{-0.51}$	2836^{+189}_{-128}	2930^{+1443}_{-5806}	$0.554^{+2.754}_{-0.467}$

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

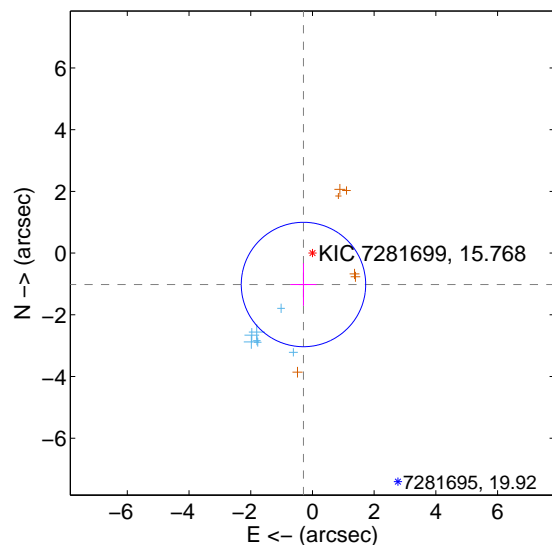
Supplemental centroid analysis for 007281699-01. Kepler magnitude: 15.77. Transit SNR 10.46

There are 7 quarters with good PRF difference image offsets

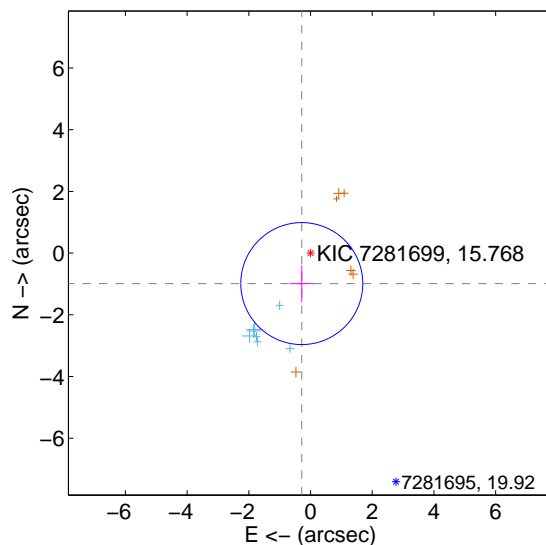
The direct PRF centroid is offset from the target star catalog position by about 0.13 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.058 ± 0.672	1.57	0.290 ± 0.424	-1.018 ± 0.688
PRF-fit source offset from KIC position	1.028 ± 0.659	1.56	0.283 ± 0.391	-0.988 ± 0.594
photometric centroid source offset	3.59 ± 0.98	3.66	1.02 ± 0.95	-3.45 ± 0.98

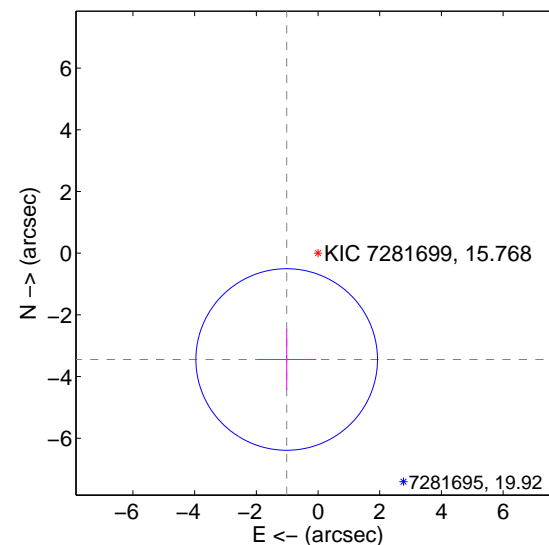
offset from difference PRF-fit to OOT PRF-fit



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.

Q1 no difference image



Q1 no OOT image



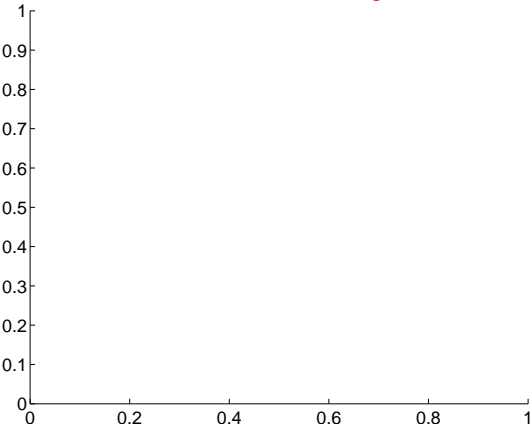
Q2 no difference image



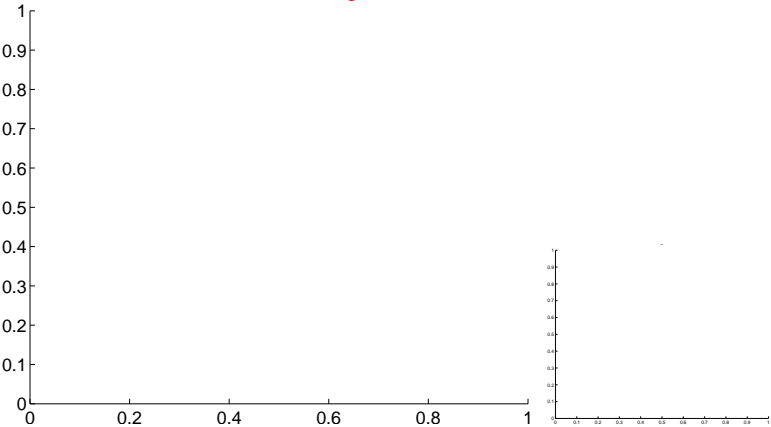
Q2 no OOT image



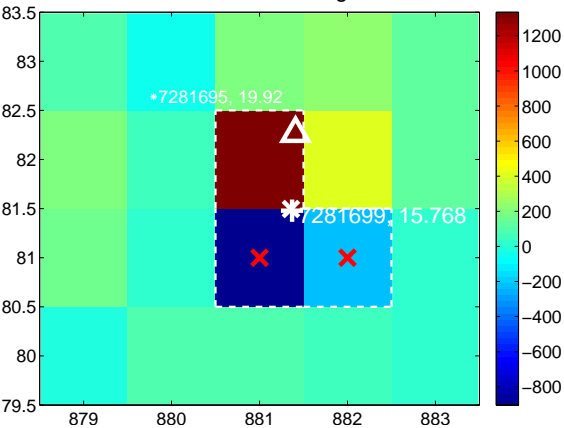
Q3 no difference image



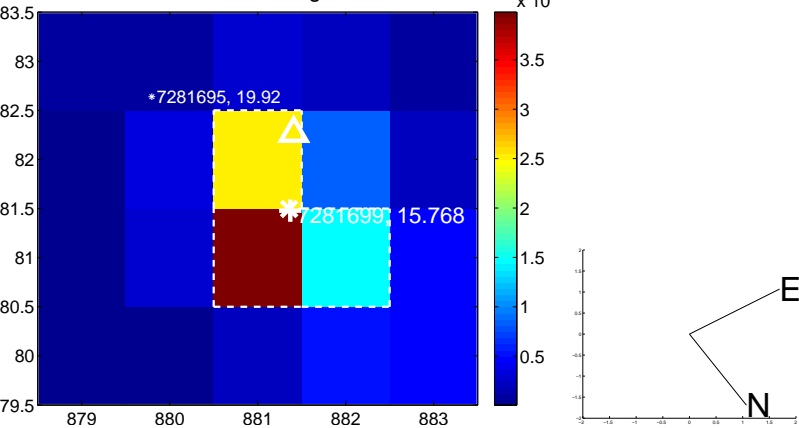
Q3 no OOT image



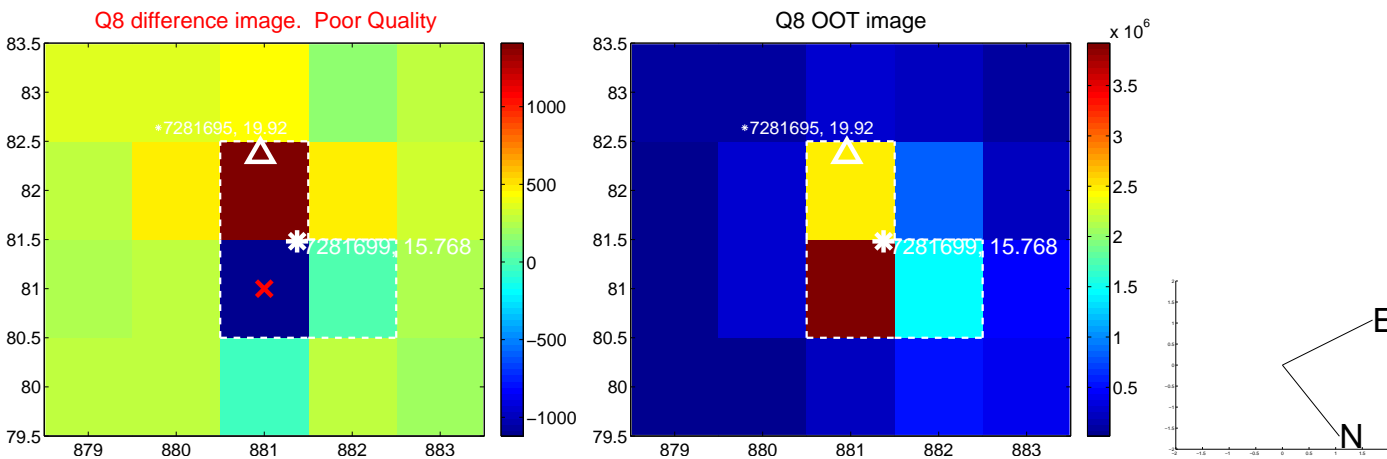
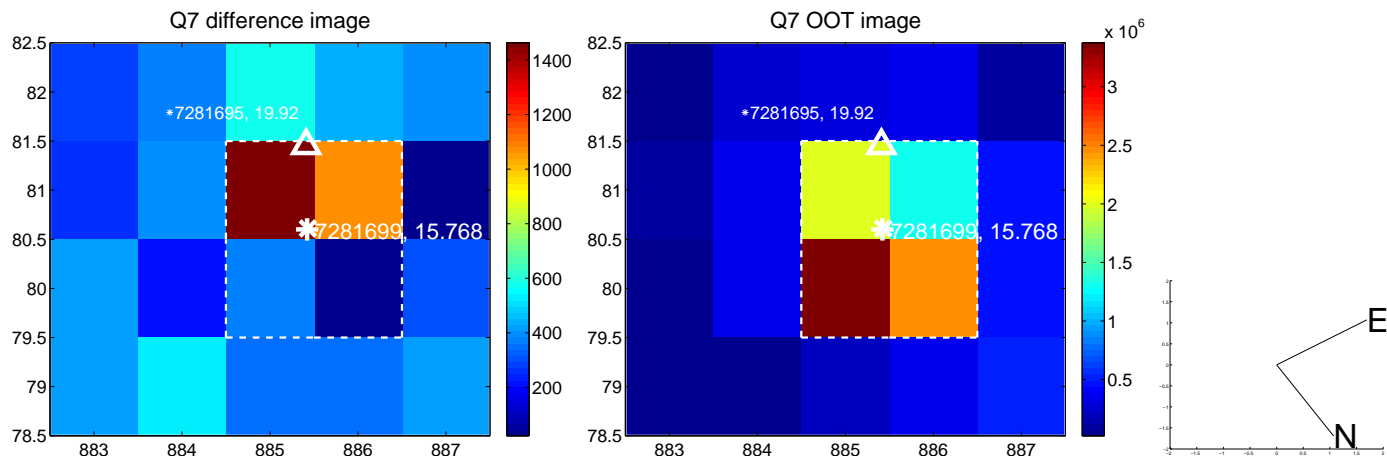
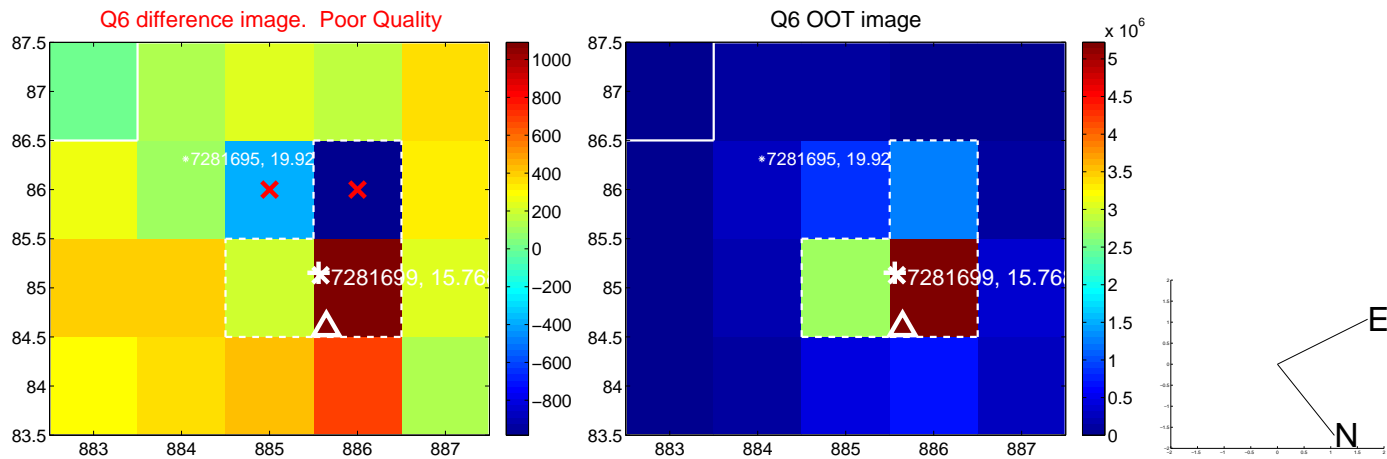
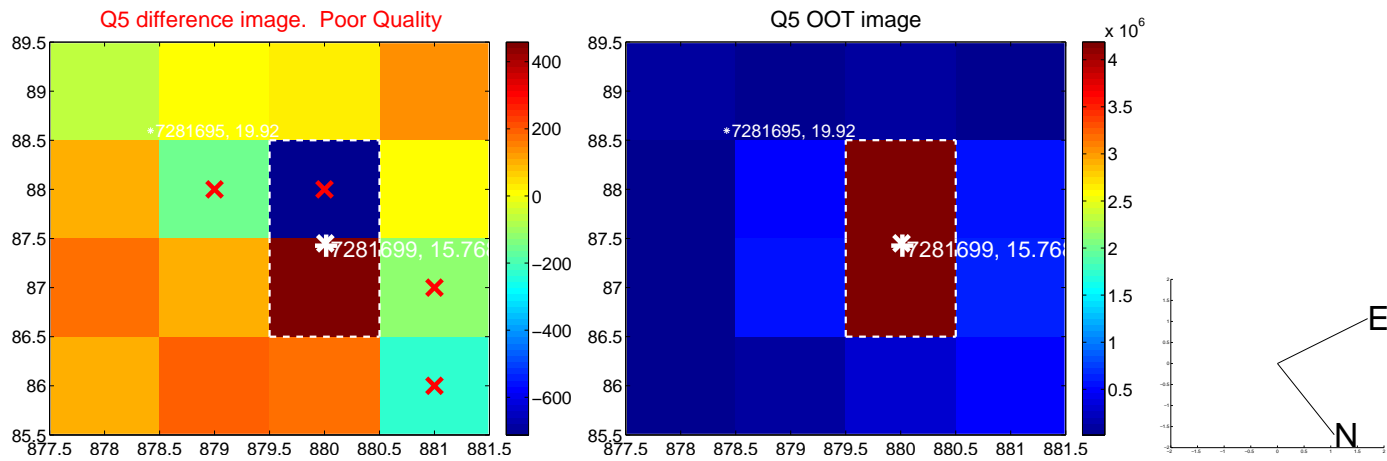
Q4 difference image



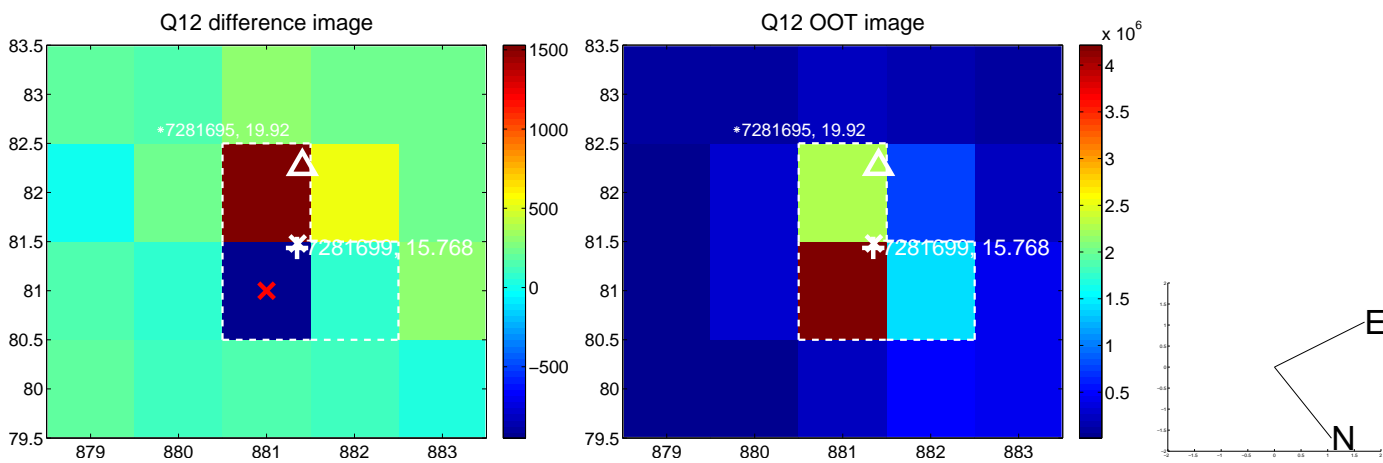
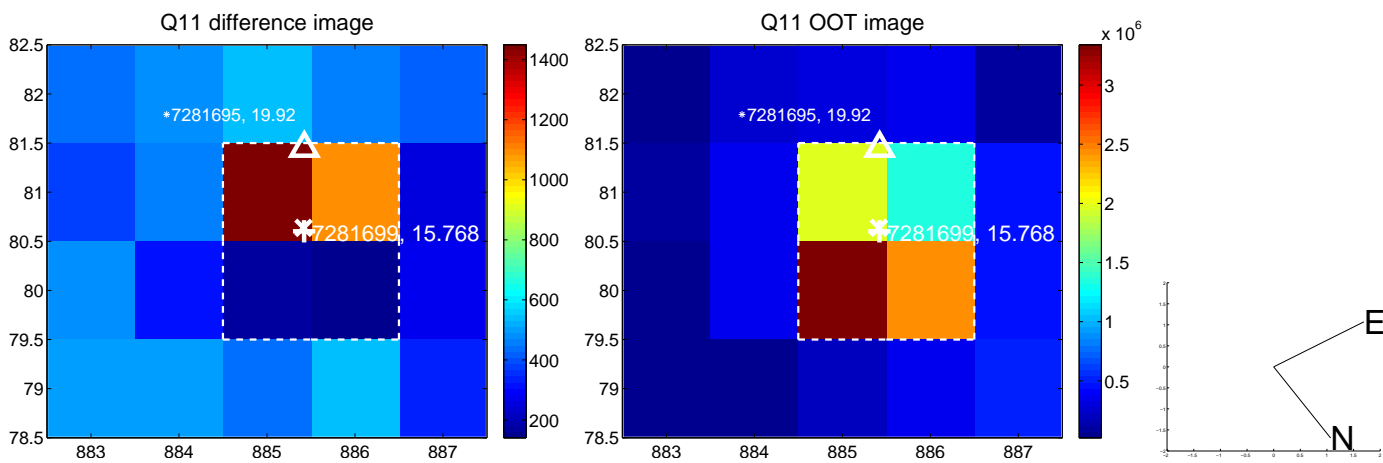
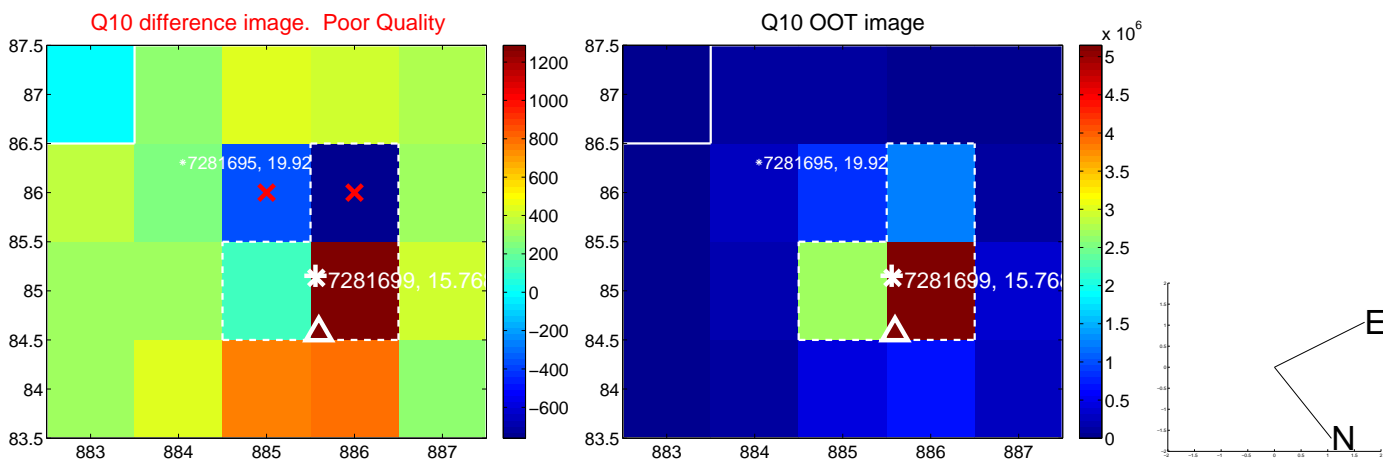
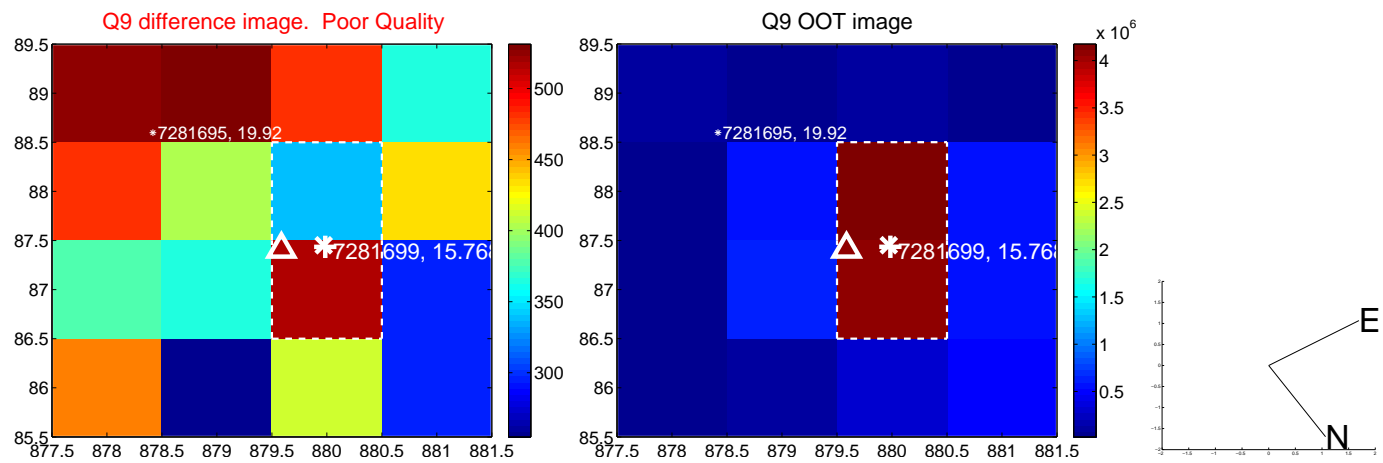
Q4 OOT image



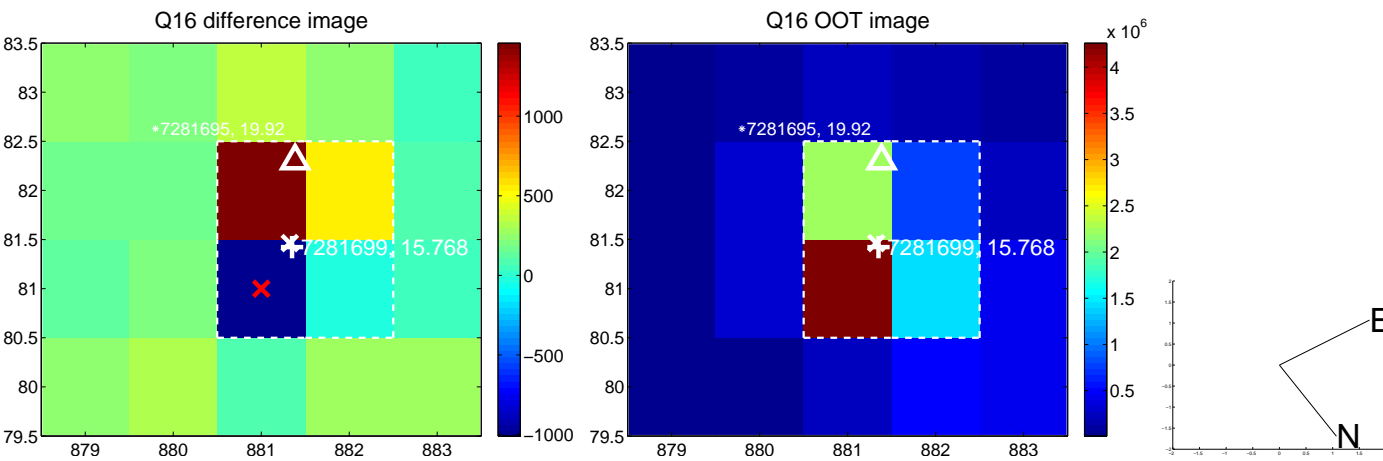
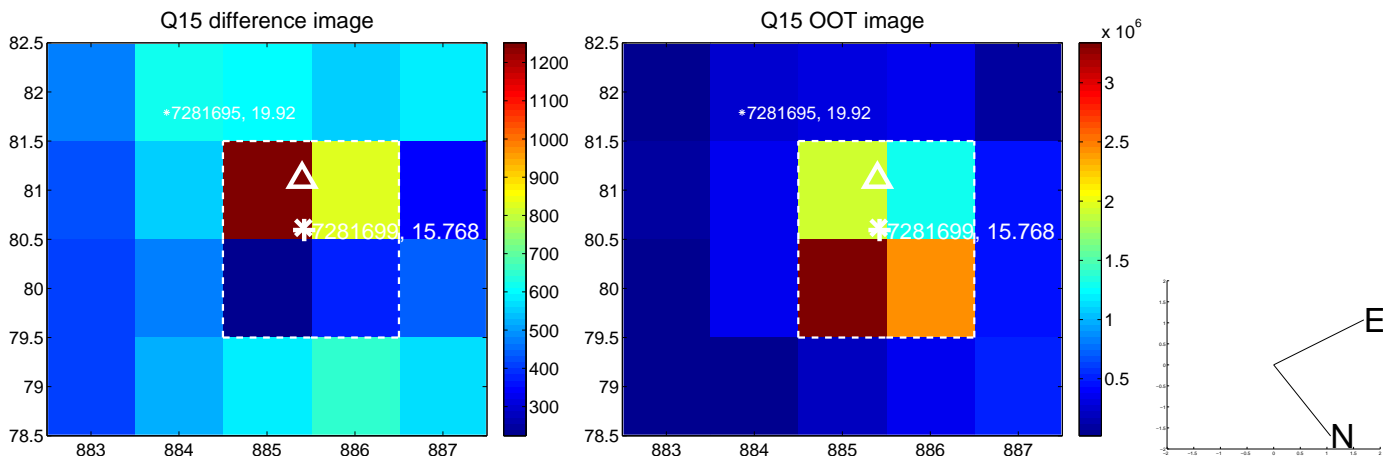
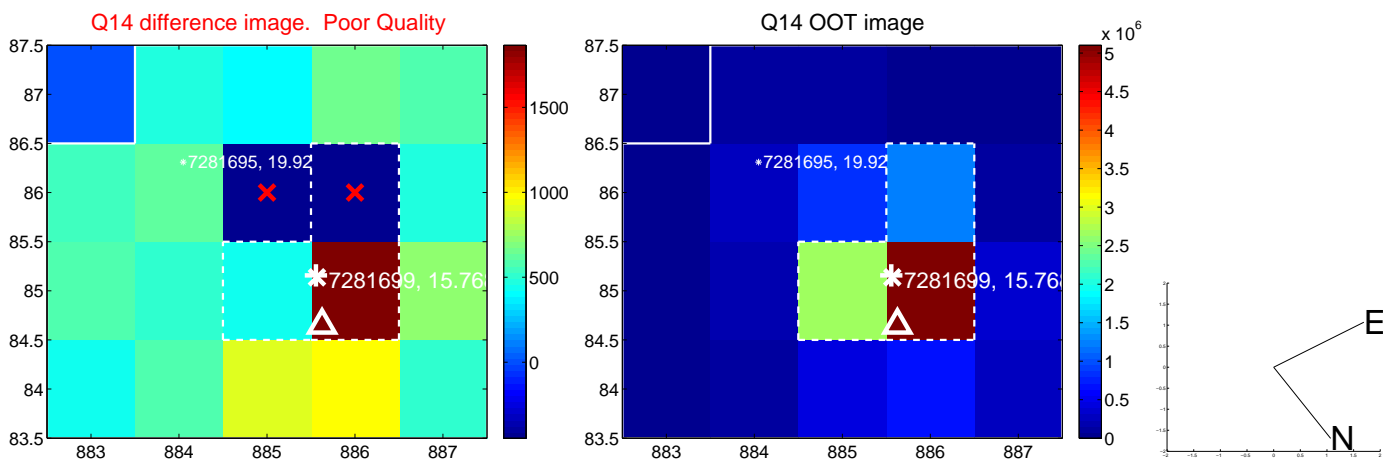
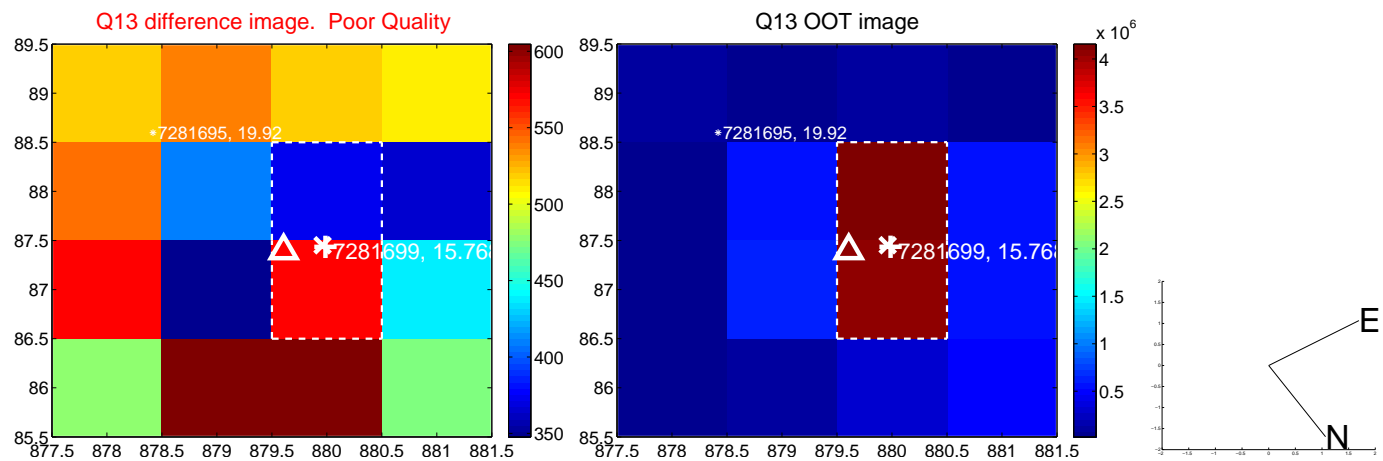
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



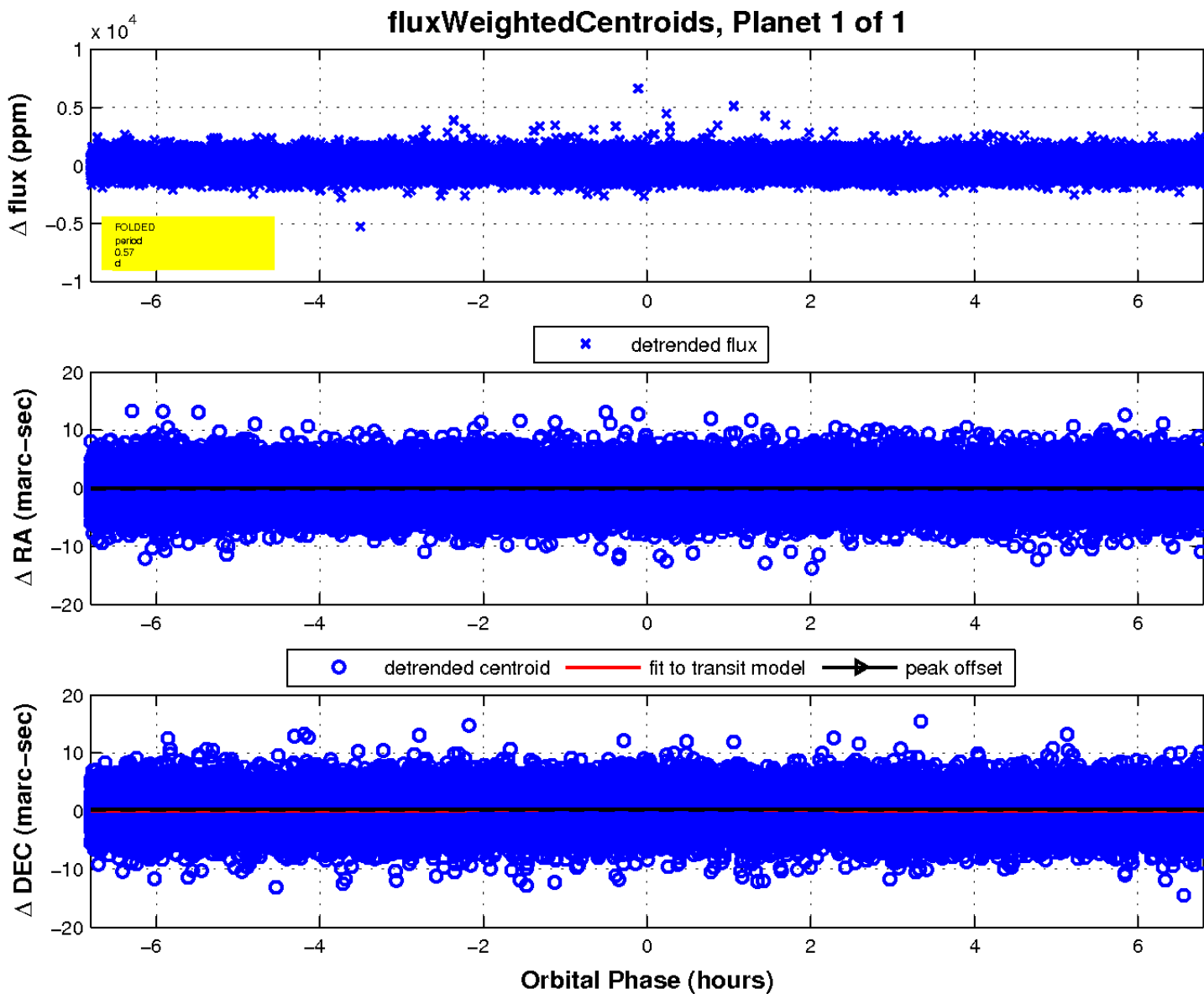
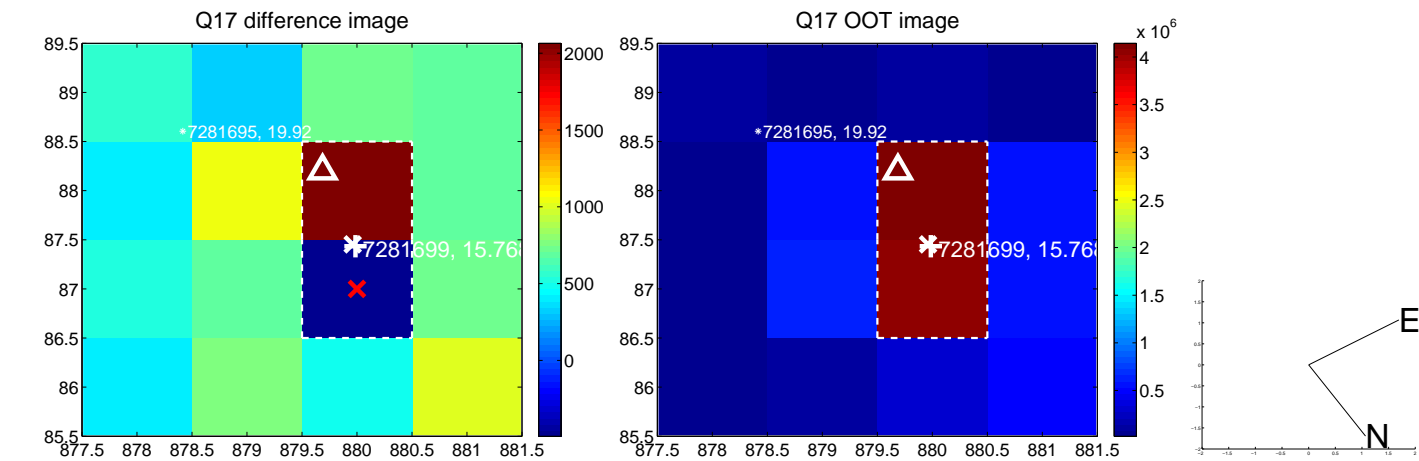
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white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination

