

KIC 010002266

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})
010002266-01	OBS	5750.01	12.713730	136.931858	197.4	1.820	8.4	9.4	0.78	5715	1.11	56.85

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010002266-01	OBS	FP	0.00	0	0	1	1	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.

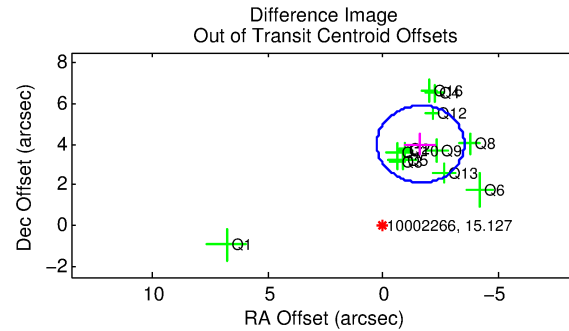
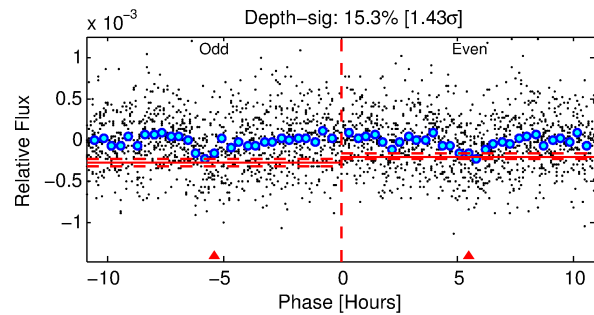
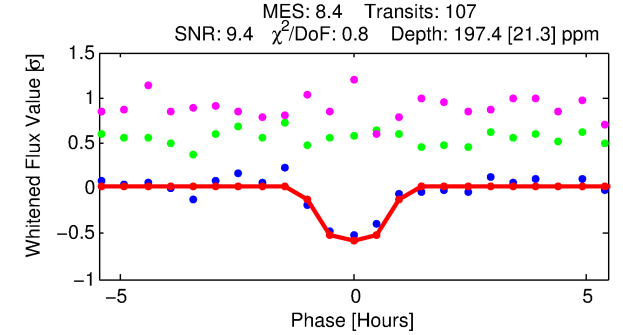
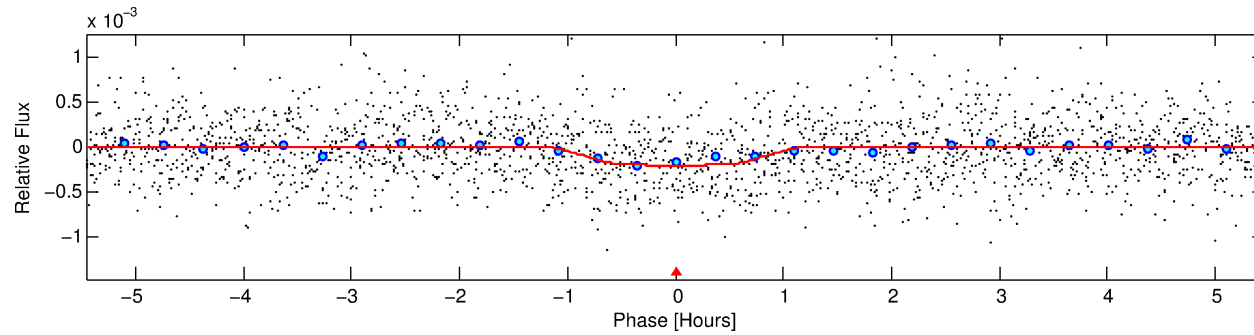
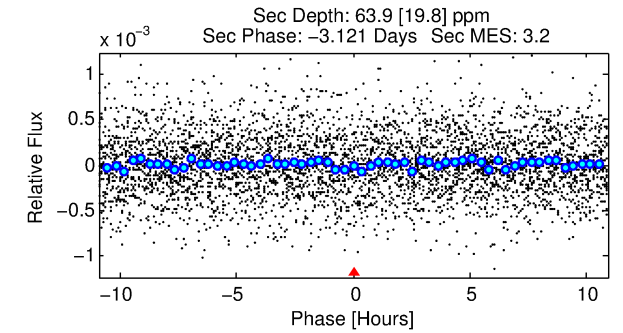
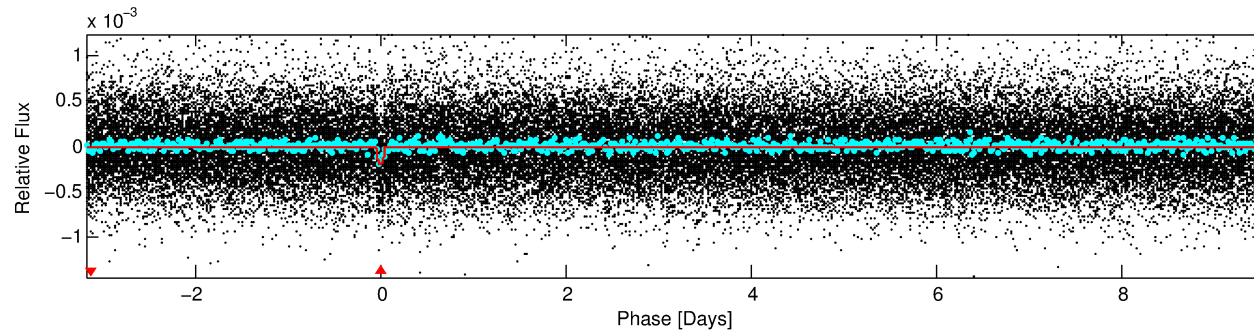
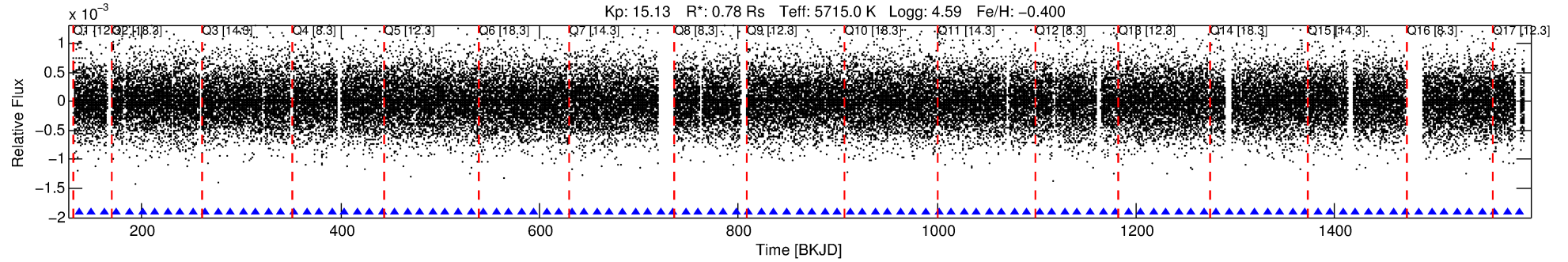
Ephemeris Match Information For 010002266-01

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
010002266-01	10002266	010002261-pri	10002261	1:1	22.4	5	-2	13.10	15.13	194.92	Direct-PRF	0	0.18	0.04

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: 10002266 Candidate: 1 of 1 Period: 12.714 d
KOI: K05750.01 Corr: 0.947



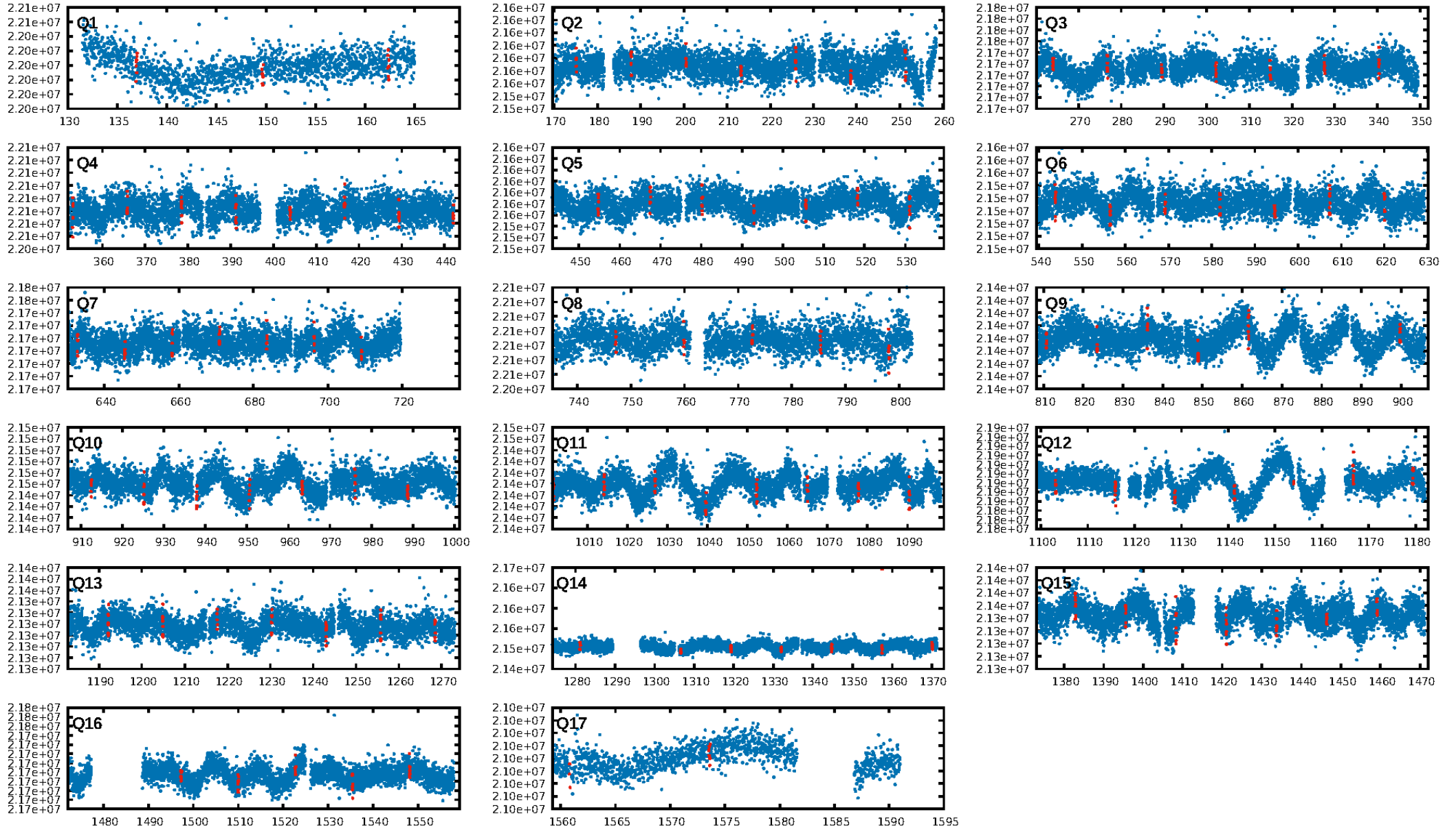
DV Fit Results:

Period = 12.71373 [0.00008] d
Epoch = 136.9319 [0.0052] BKJD
Rp/R* = 0.0130 [0.0141]
a/R* = 50.00 [246.37]
b = 0.39 [11.02]
Seff = 56.85 [18.49]
Teq = 700 [57] K
Rp = 1.11 [1.23] Re
a = 0.1014 [0.0213] AU
Ag = 291.72 [642.39] [0.45σ]
Teffp = 4474 [2442] K [1.54σ]

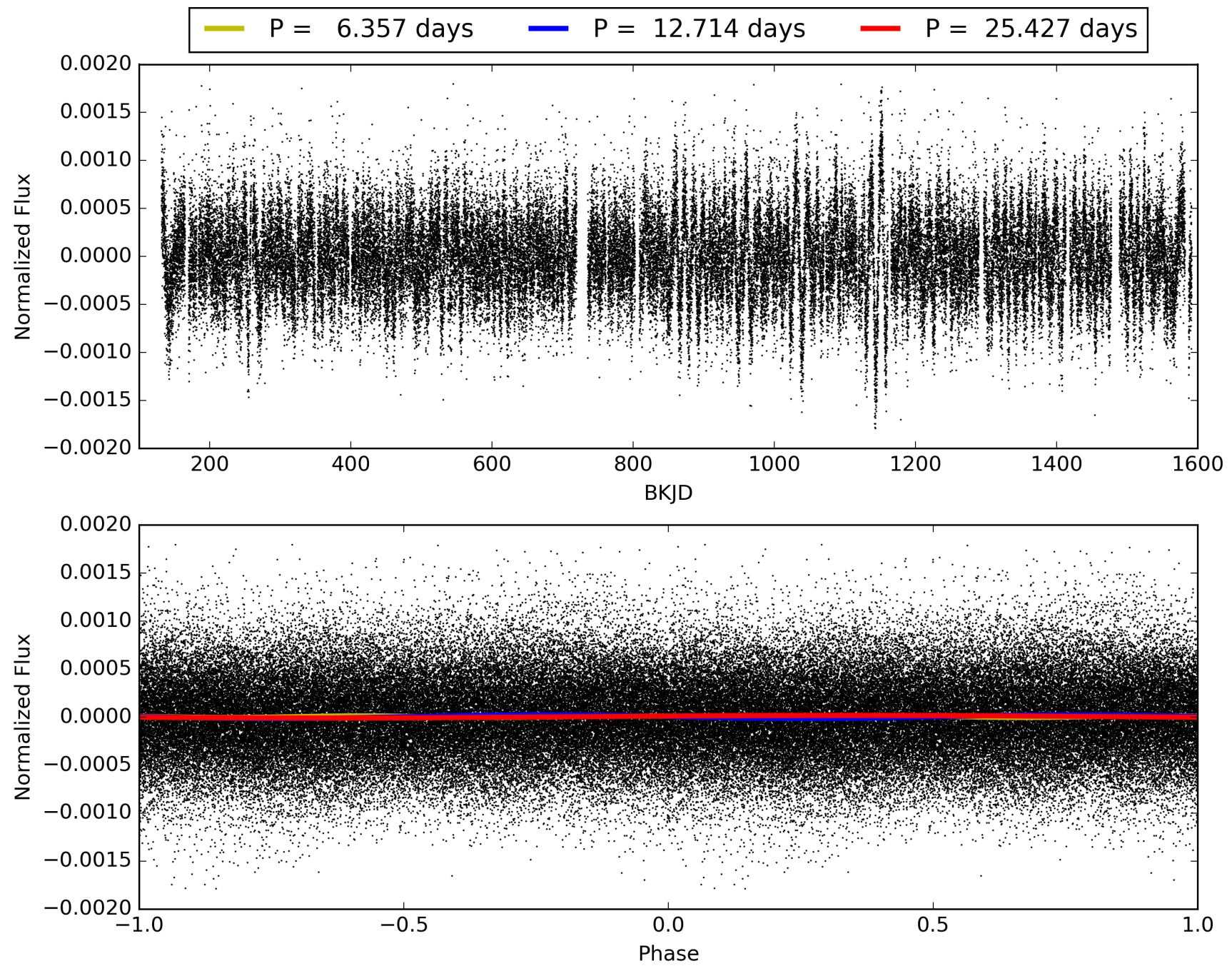
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 100.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 3.46e-17
RollingBand-fgt: 1.00 [102/102]
GhostDiagnostic-chr: -0.07633
Centroid-sig: 0.0%
Centroid-so: 9.807 arcsec [7.22σ]
OotOffset-rm: 4.320 arcsec [6.87σ]
KicOffset-rm: 4.300 arcsec [6.71σ]
OotOffset-st: 3/2/4/4 [13]
KicOffset-st: 3/2/4/4 [13]
DiffImageQuality-fgm: 0.38 [5/13]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 010002266-01, PDC Light Curves

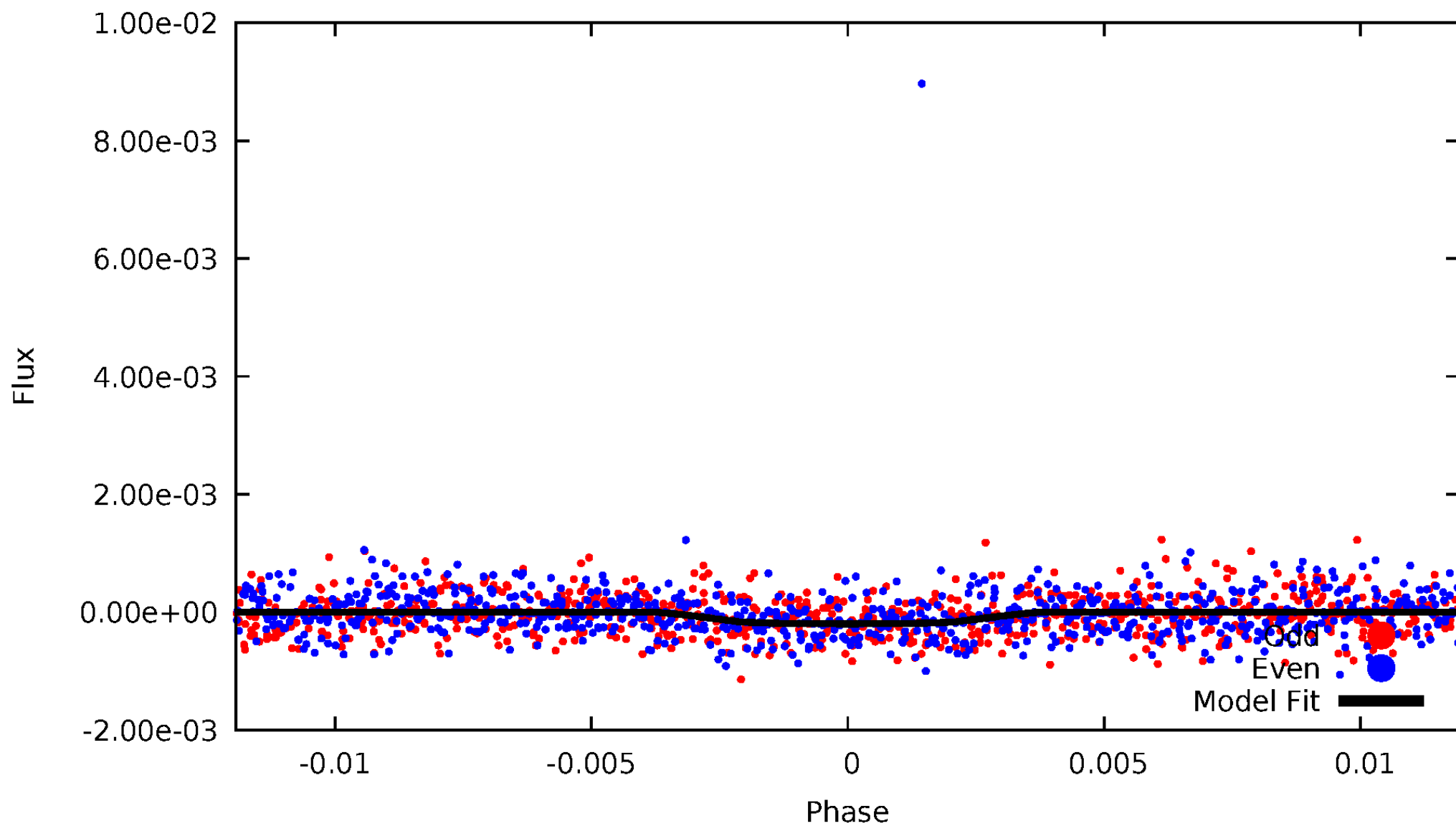


TCE 010002266-01



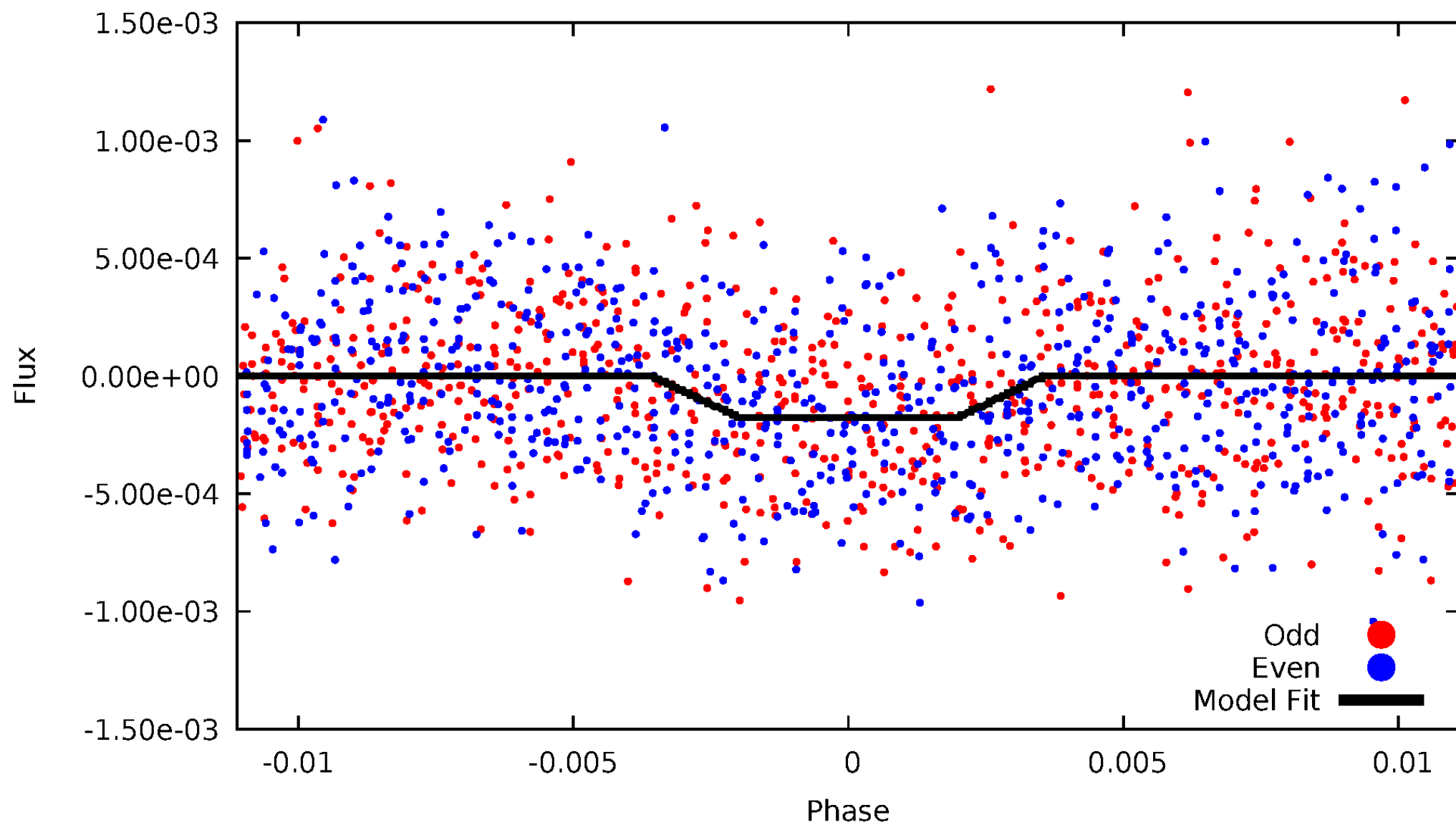
DV Odd/Even

TCE 010002266-01



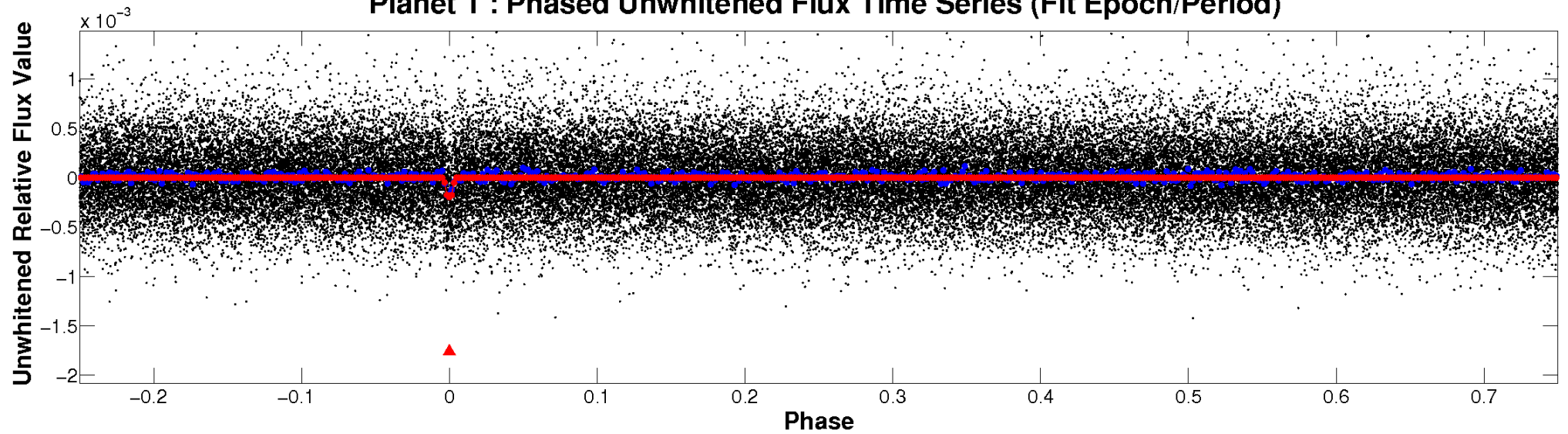
ALT Odd/Even

TCE 010002266-01

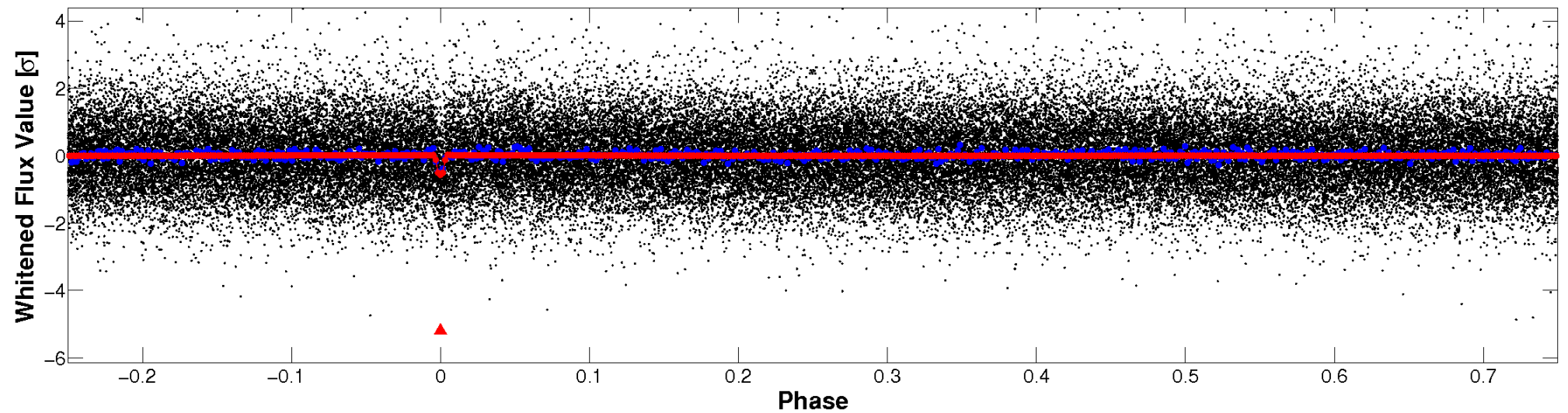


Non-Whitened Vs. Whitened Light Curve

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

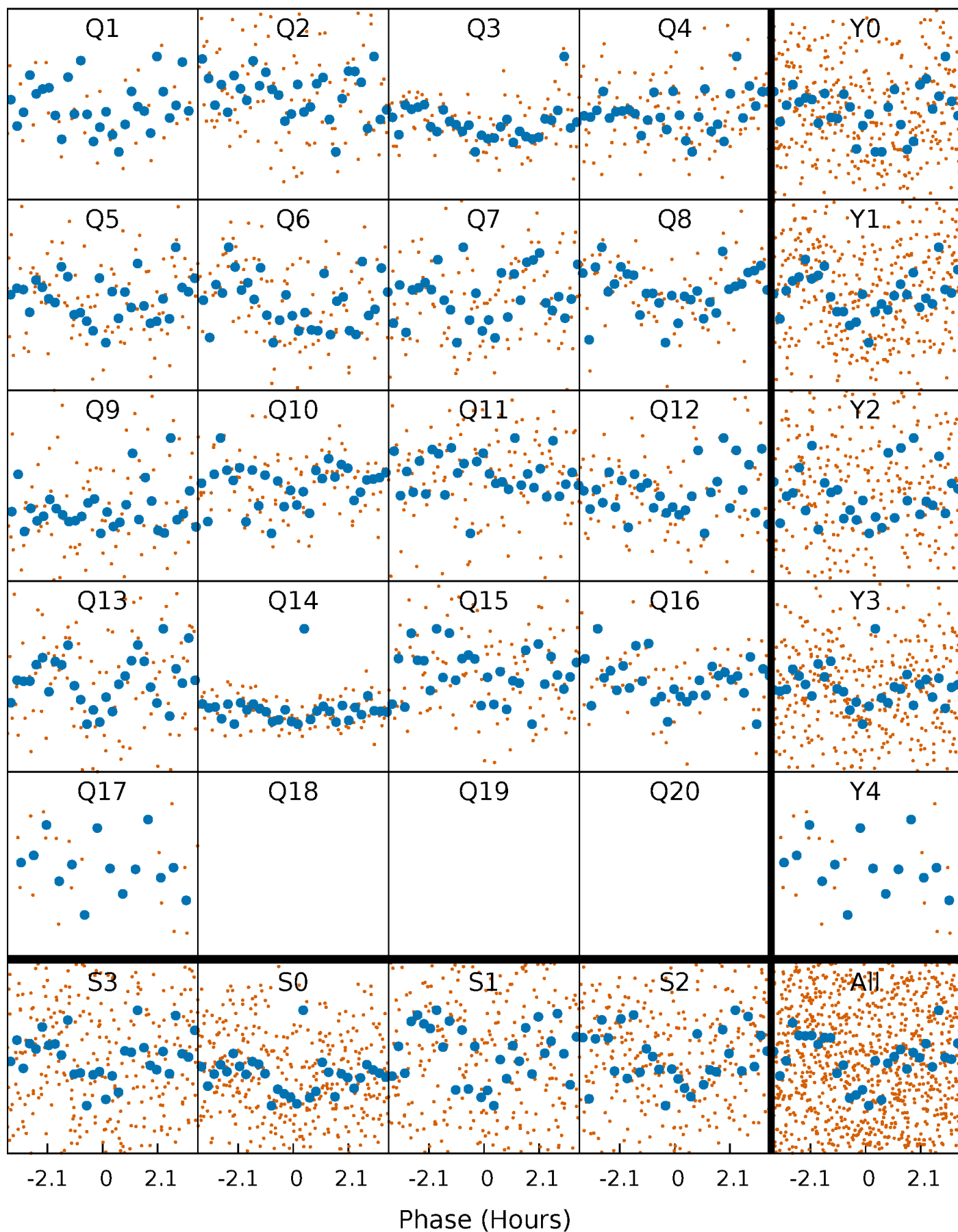


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



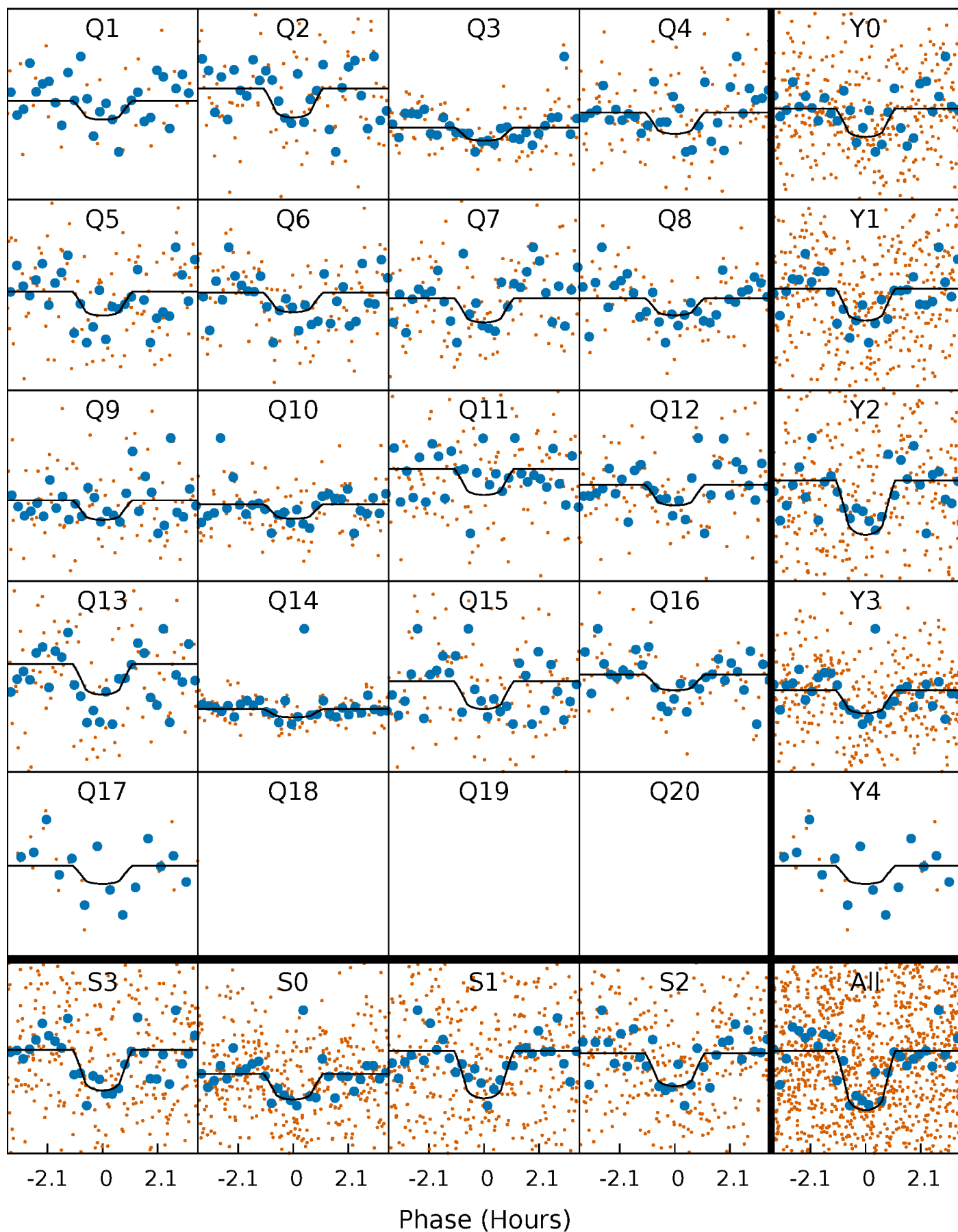
PDC Quarter-Phased Transit Curves

TCE 010002266-01 P= 12.713730 Days $T_0=136.931858$ (BKJD)



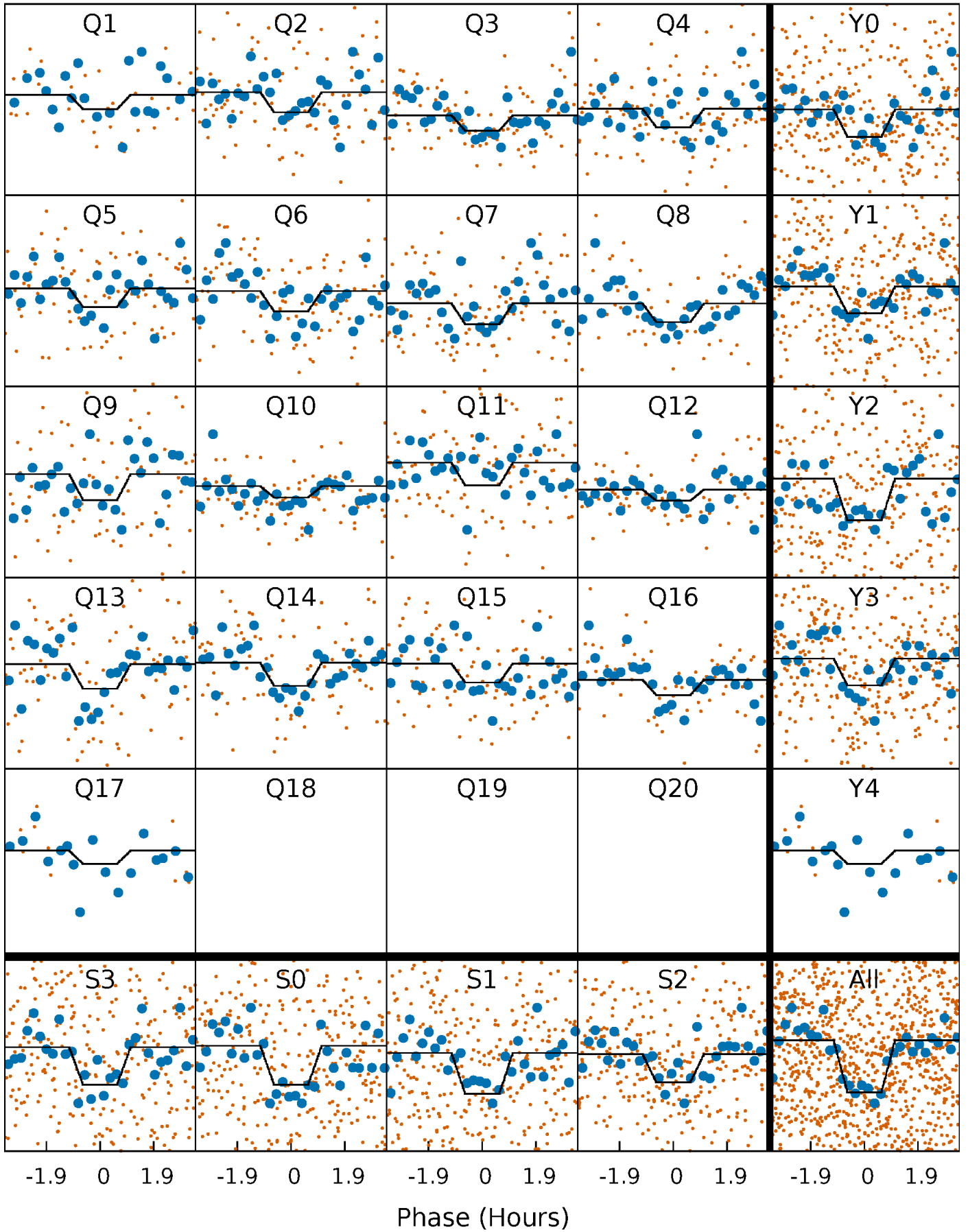
DV Quarter-Phased Transit Curves

TCE 010002266-01 P= 12.713730 Days $T_0=136.931858$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

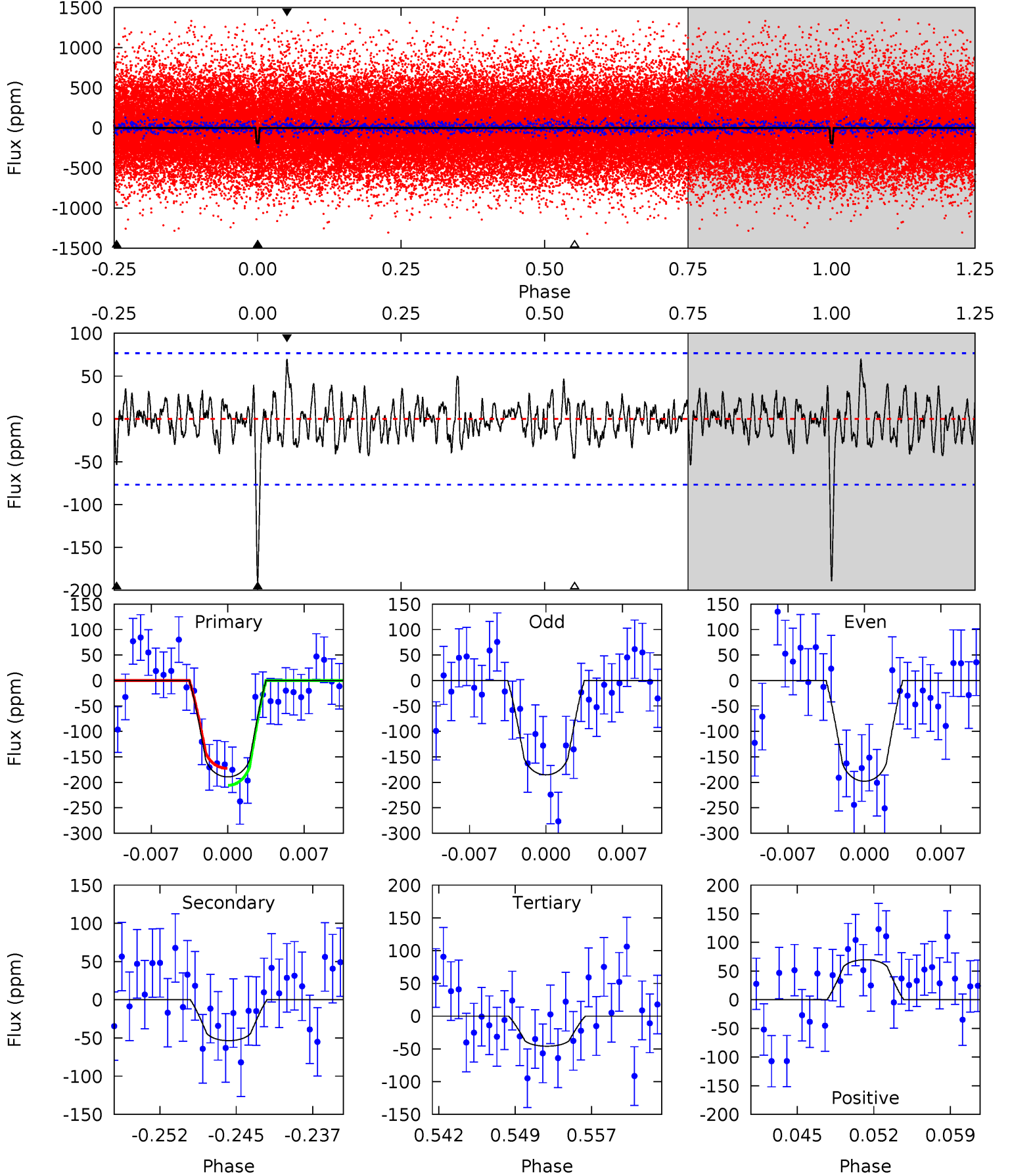
TCE 010002266-01 P= 12.713783 Days $T_0=136.928870$ (BKJD)



DV Model-Shift Uniqueness Test

010002266-01, P = 12.713730 Days, E = 124.218128 Days

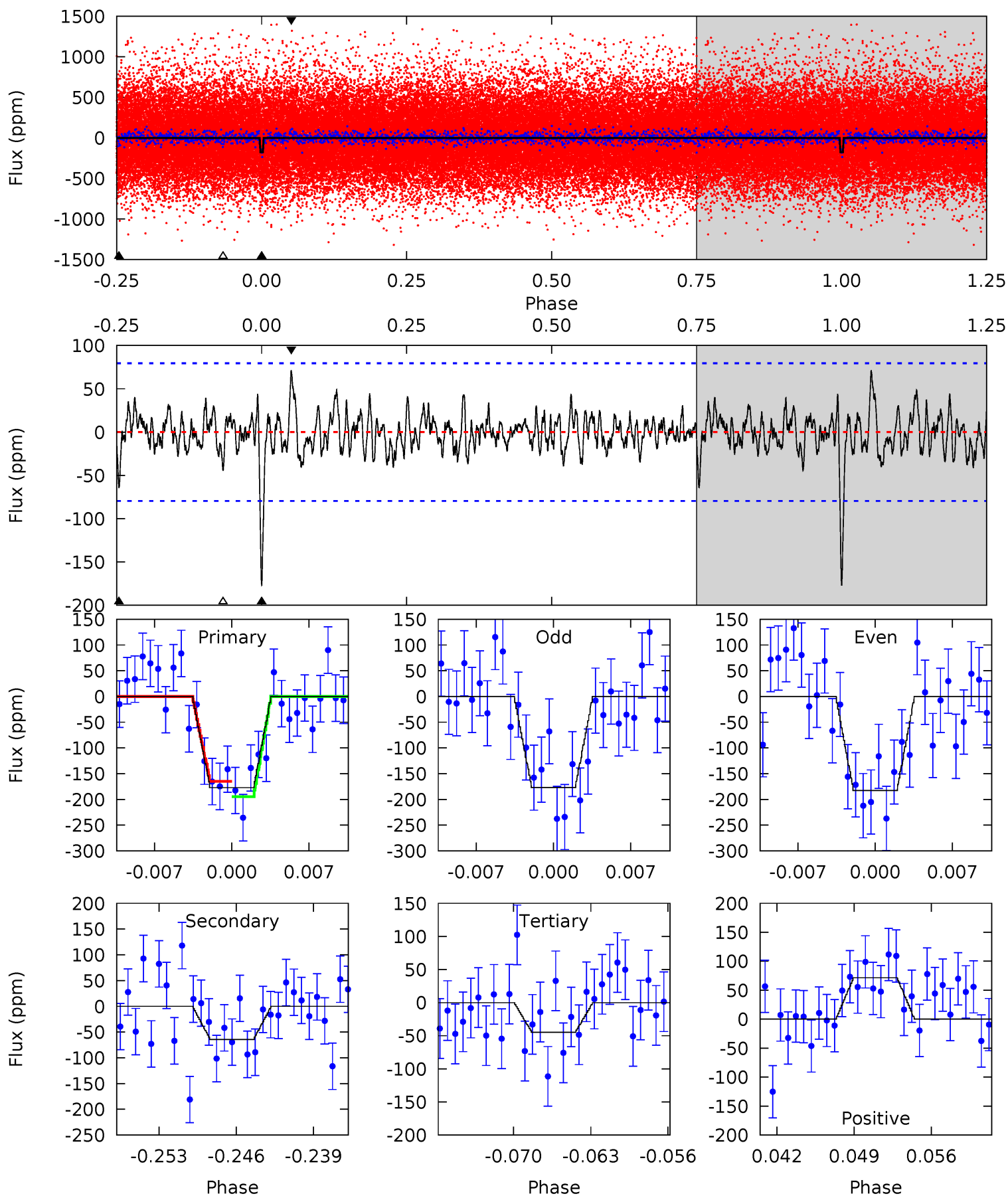
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.5	3.55	3.04	4.63	5.08	2.68	1.15	9.50	7.92	0.50	-1.08	0.41	0.89	0.27	1.11



Alt Model-Shift Uniqueness Test

010002266-01, $P = 12.713783$ Days, $E = 124.215087$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.3	4.11	2.87	4.58	5.09	2.70	1.10	8.48	6.77	1.24	-0.47	0.20	0.92	0.29	0.95



Stellar Parameters For KIC 010002266

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5715^{+154}_{-154}	$4.586^{+0.031}_{-0.168}$	$-0.400^{+0.300}_{-0.300}$	$0.782^{+0.195}_{-0.065}$	$0.872^{+0.089}_{-0.098}$	$2.571^{+0.441}_{-1.211}$
	+3%/-3%	+1%/-4%	+75%/-75%	+25%/-8%	+10%/-11%	+17%/-47%
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 010002266-01 / KOI 5750.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-54 ± 15	$1.39^{+1.21}_{-0.89}$	1003^{+56}_{-42}	4193^{+2185}_{-818}	151^{+999}_{-109}
Alt.	-64 ± 16	$1.50^{+1.22}_{-0.93}$	1003^{+59}_{-42}	4225^{+2149}_{-797}	157^{+913}_{-112}

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 $A_{obs} \gg 1.0$

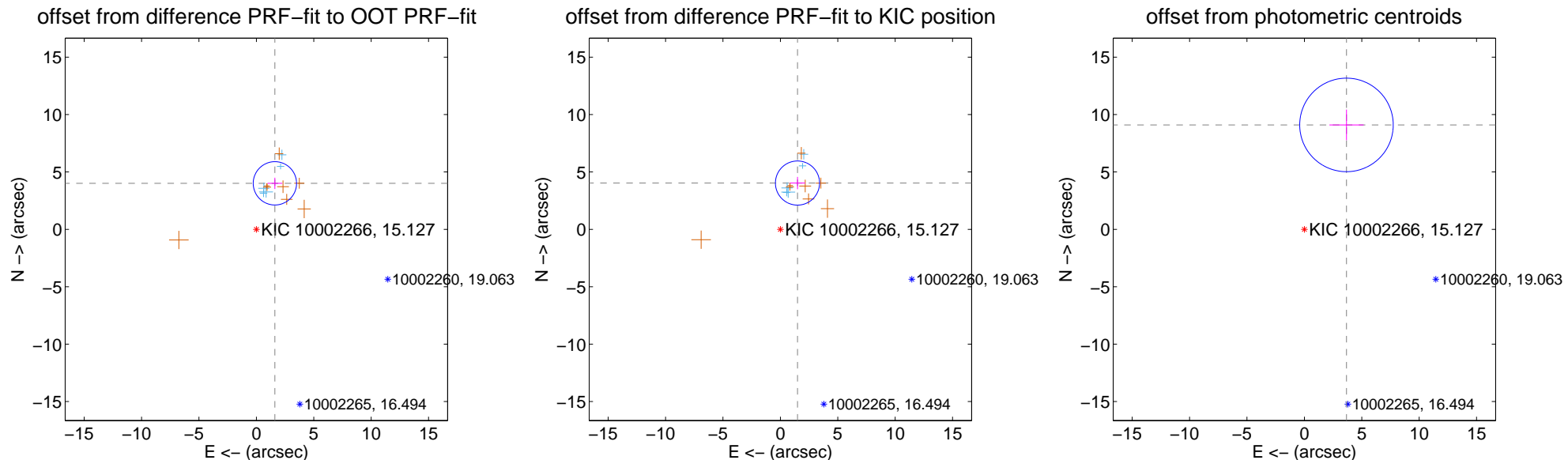
DV Centroid Data

Supplemental centroid analysis for 010002266-01. Kepler magnitude: 15.13. Transit SNR 9.44

There are 5 quarters with good PRF difference image offsets

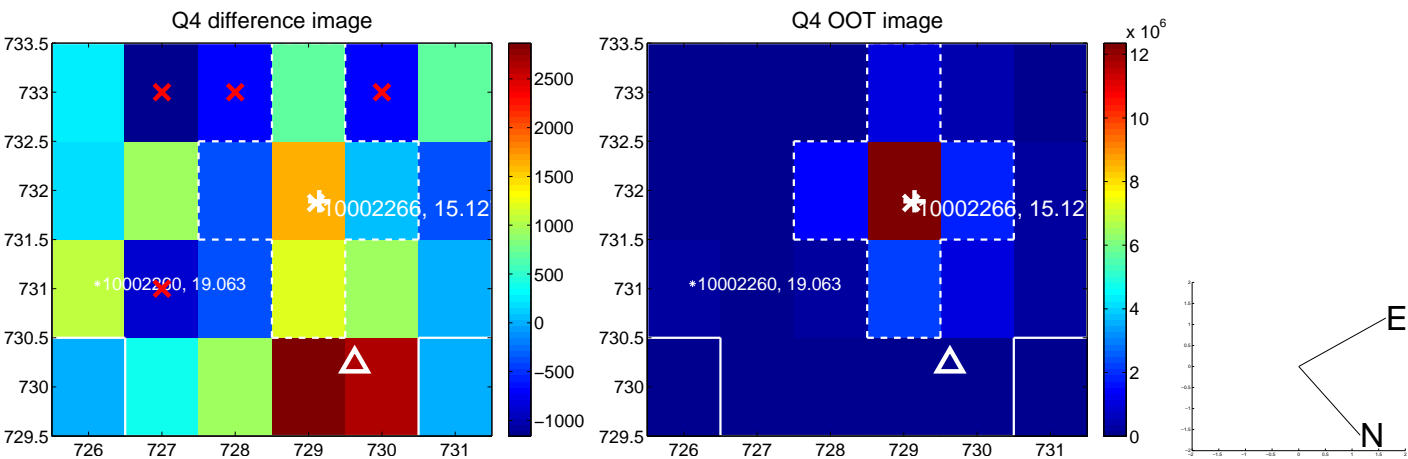
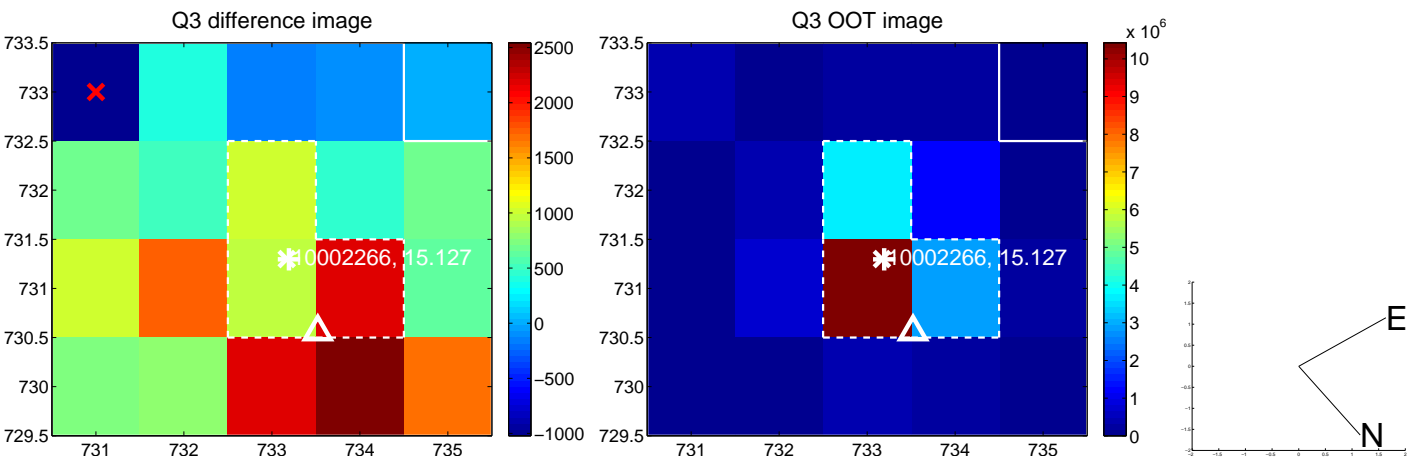
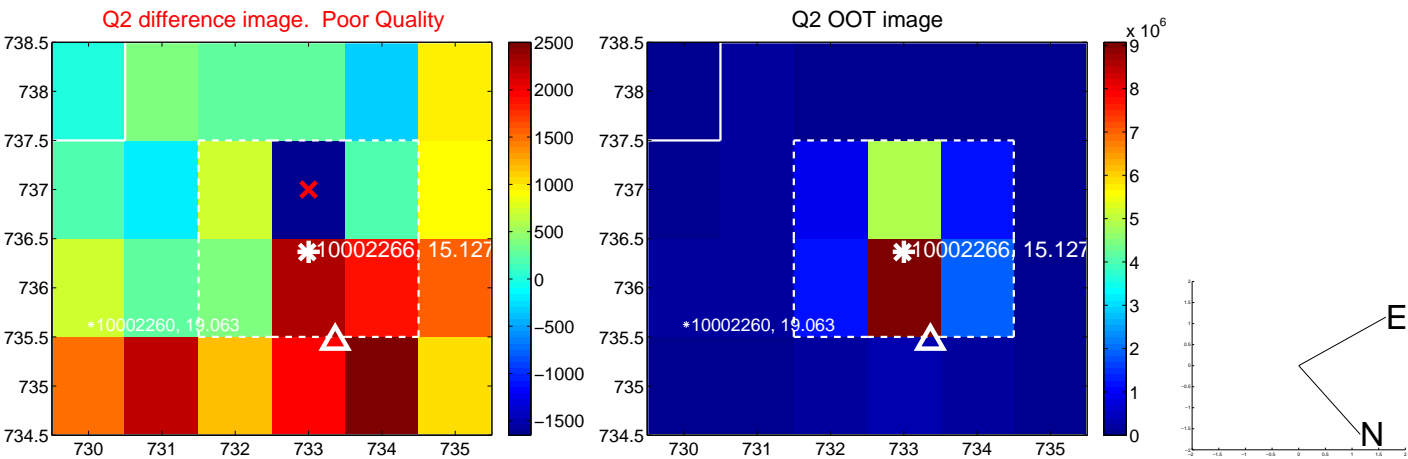
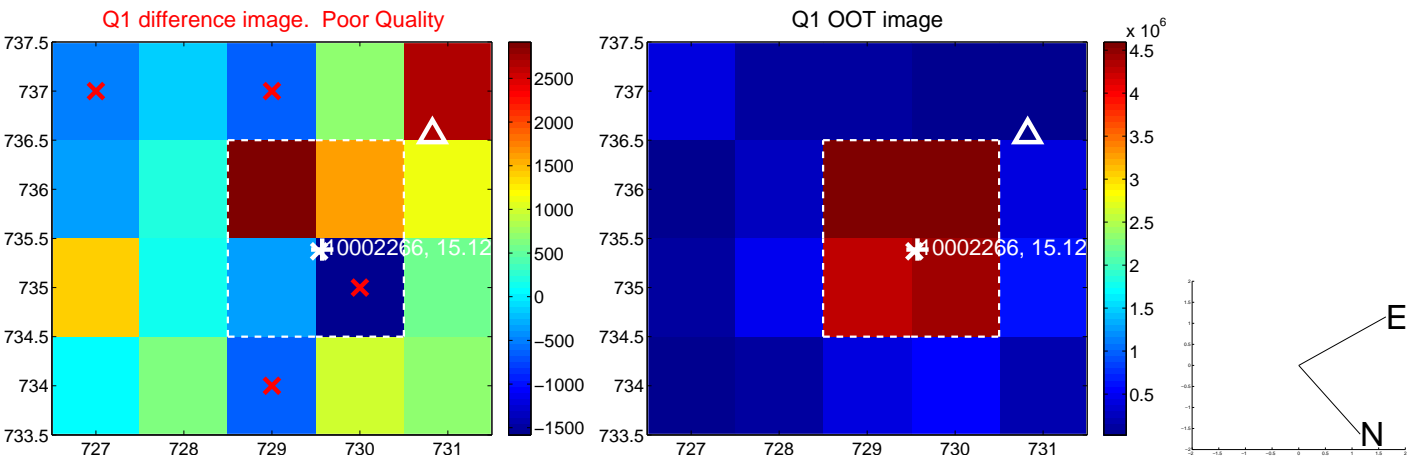
The direct PRF centroid is offset from the target star catalog position by about 0.16 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	4.320 ± 0.629	6.87	-1.613 ± 0.643	4.008 ± 0.493
PRF-fit source offset from KIC position	4.300 ± 0.641	6.71	-1.491 ± 0.667	4.033 ± 0.533
photometric centroid source offset	9.81 ± 1.36	7.22	-3.67 ± 1.49	9.10 ± 1.34

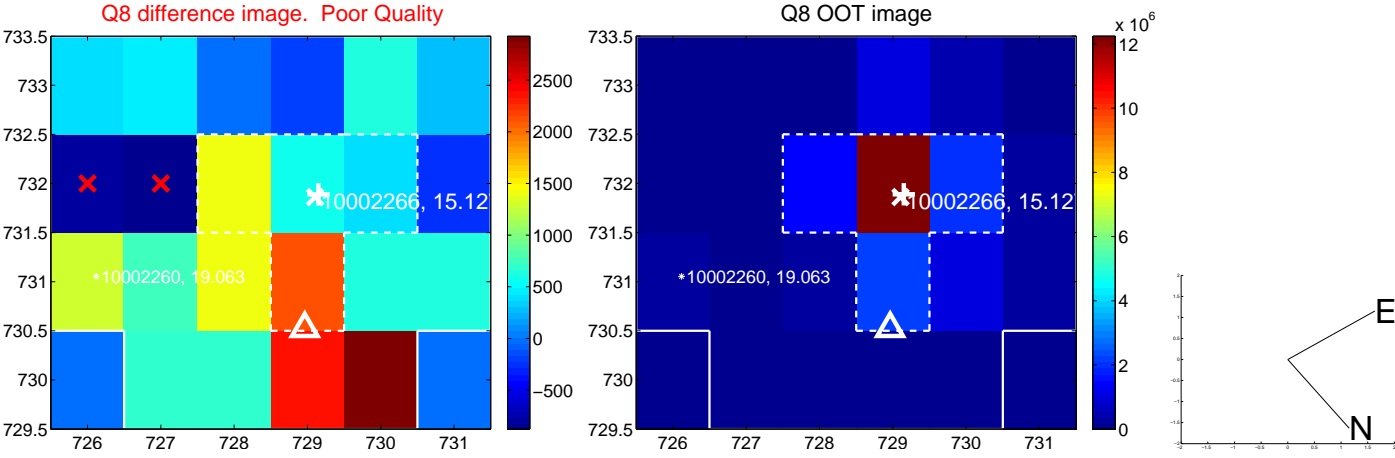
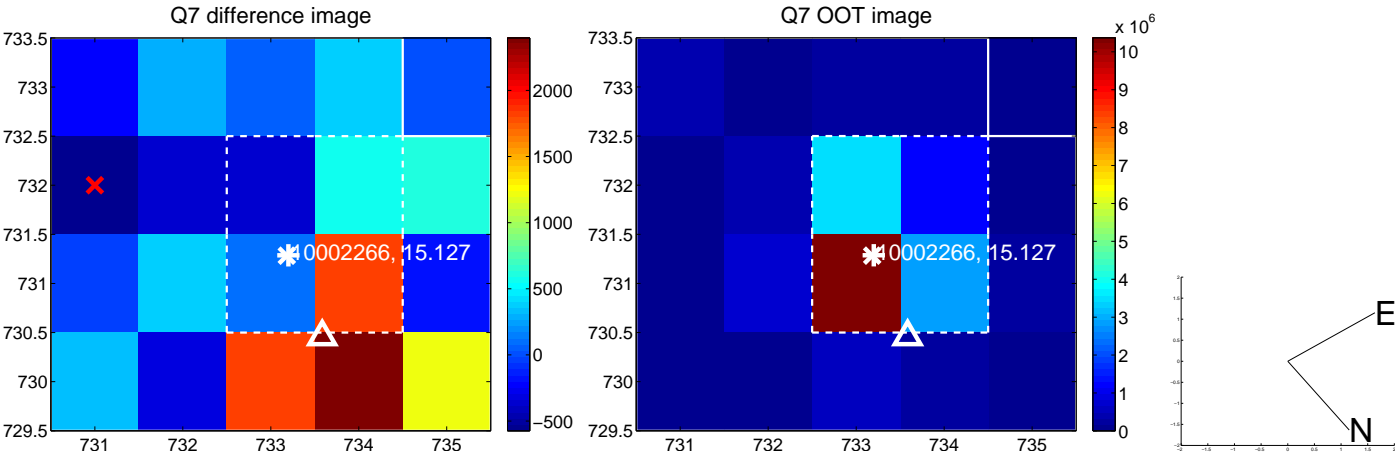
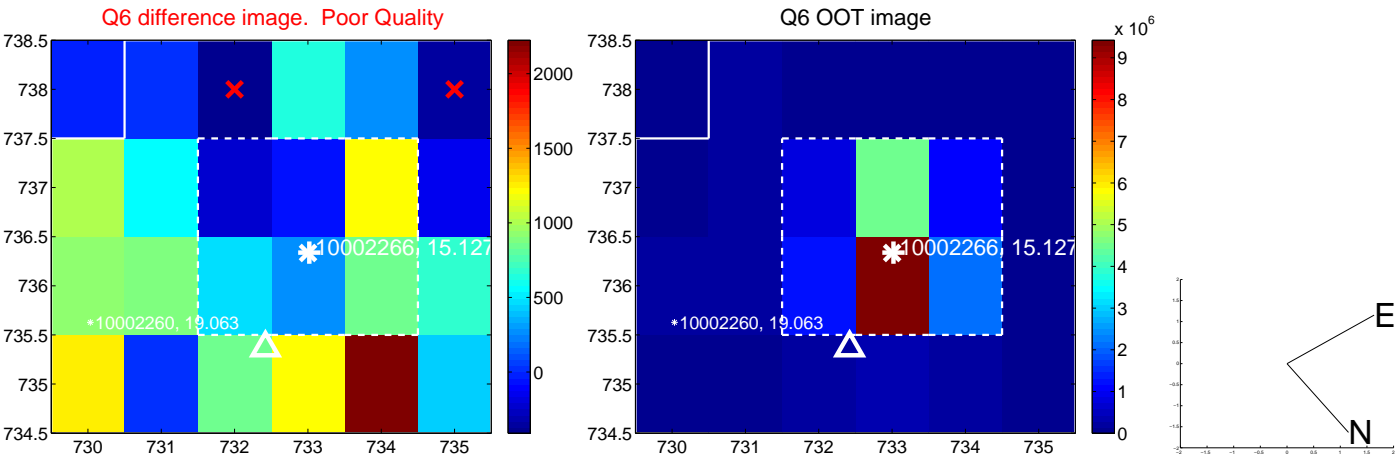
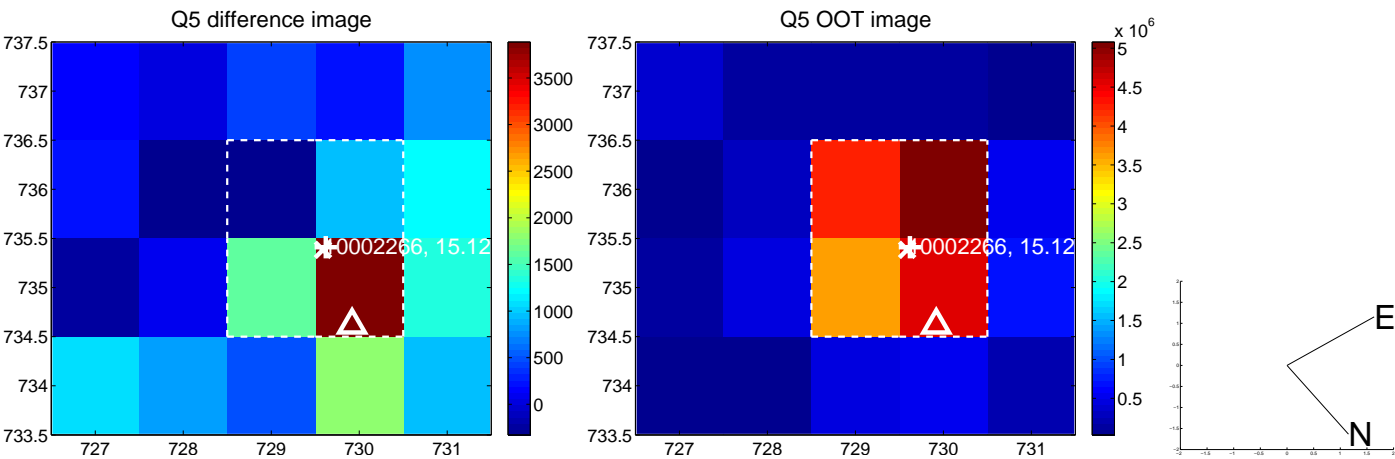


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

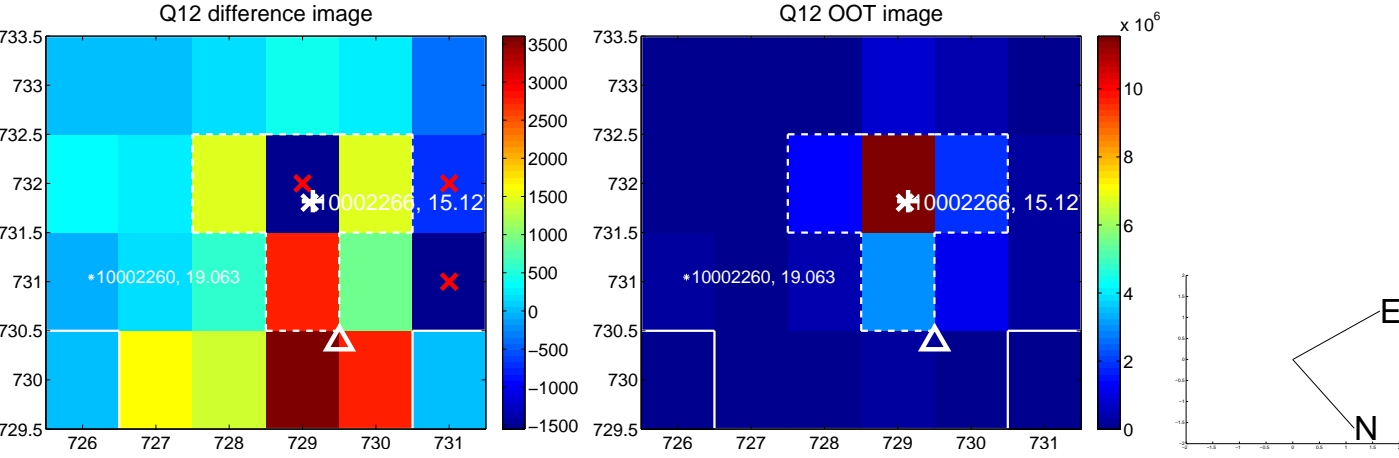
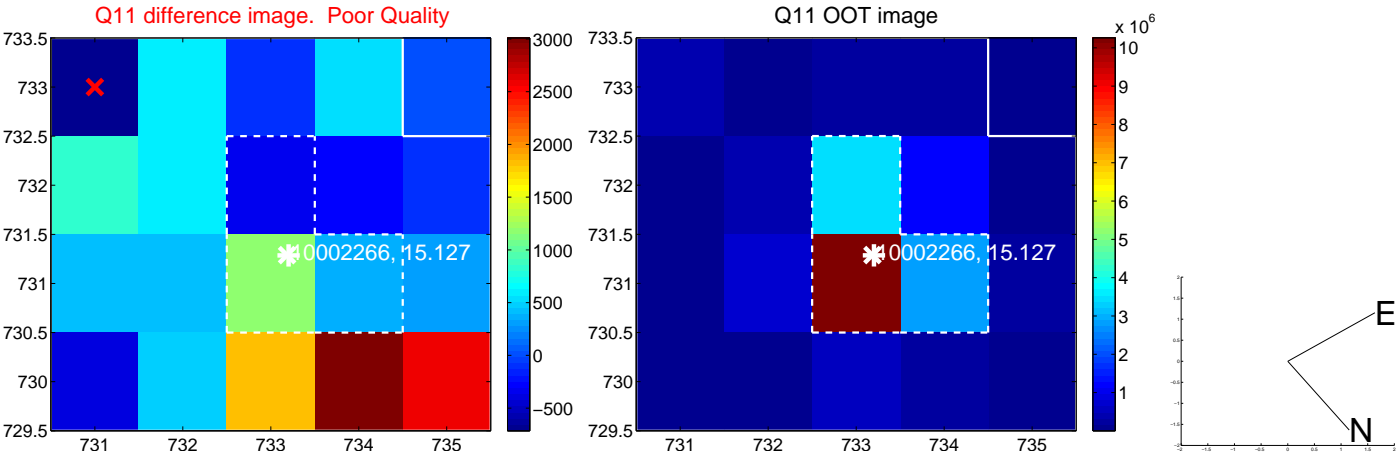
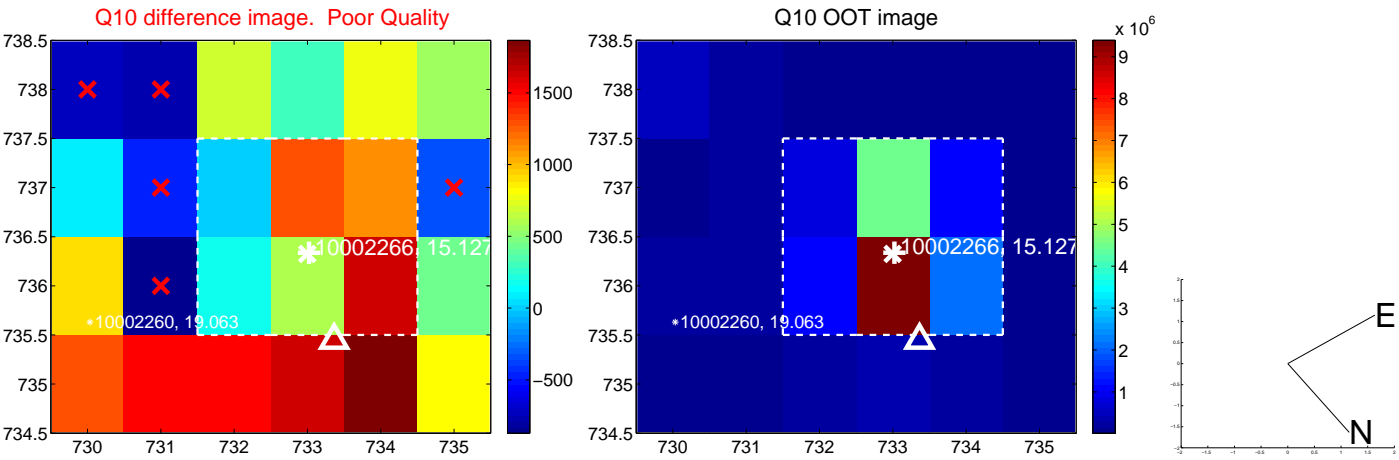
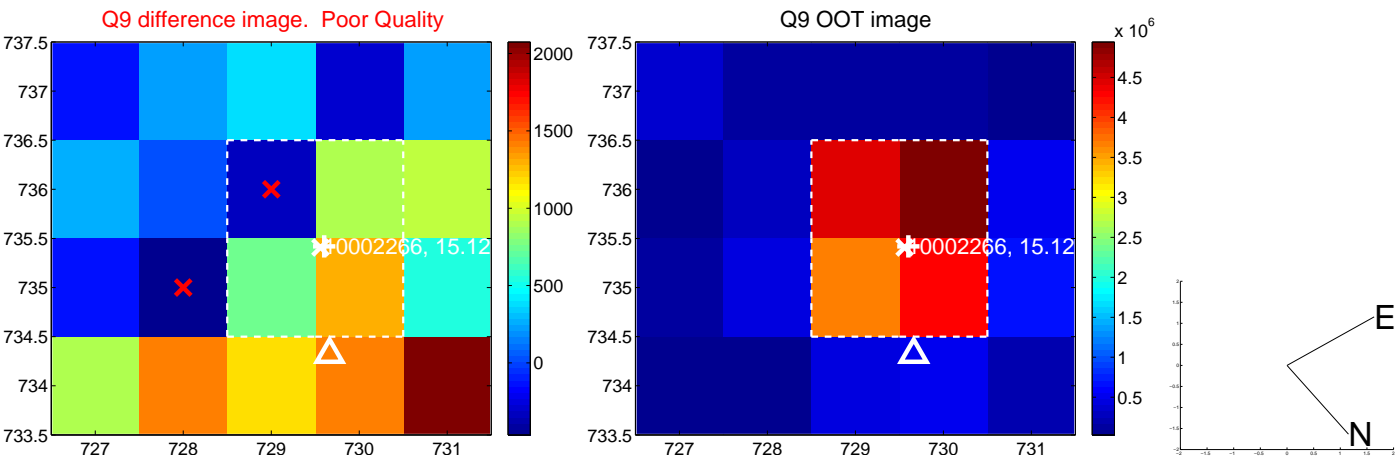
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



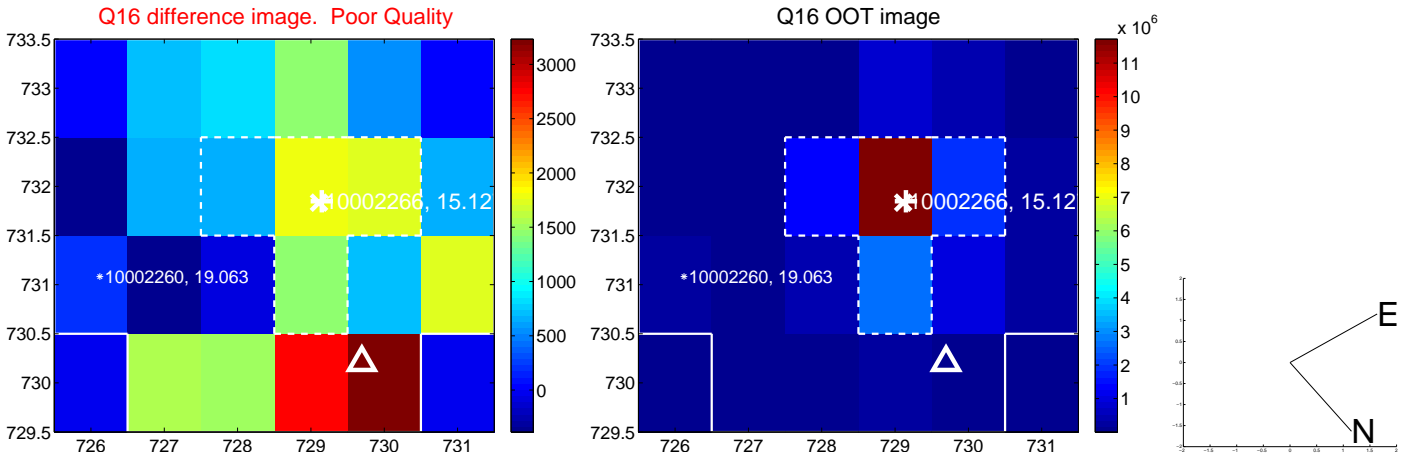
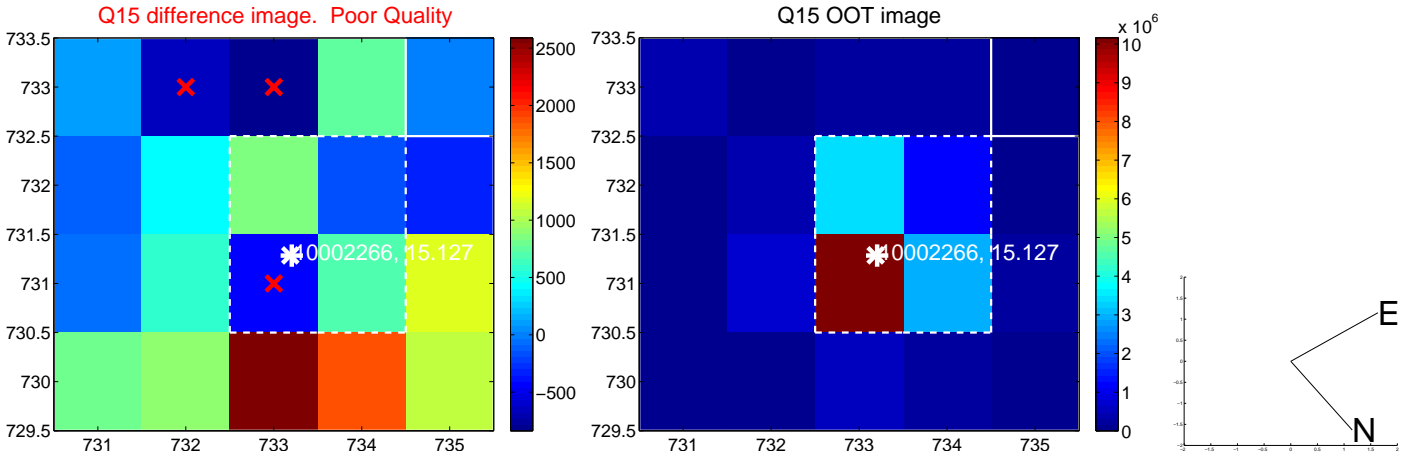
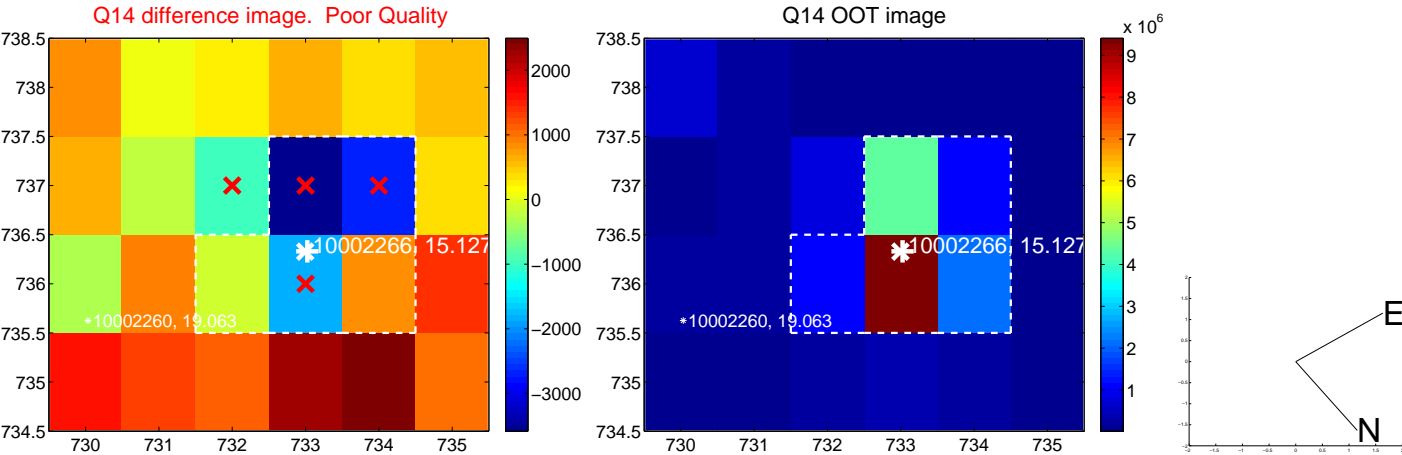
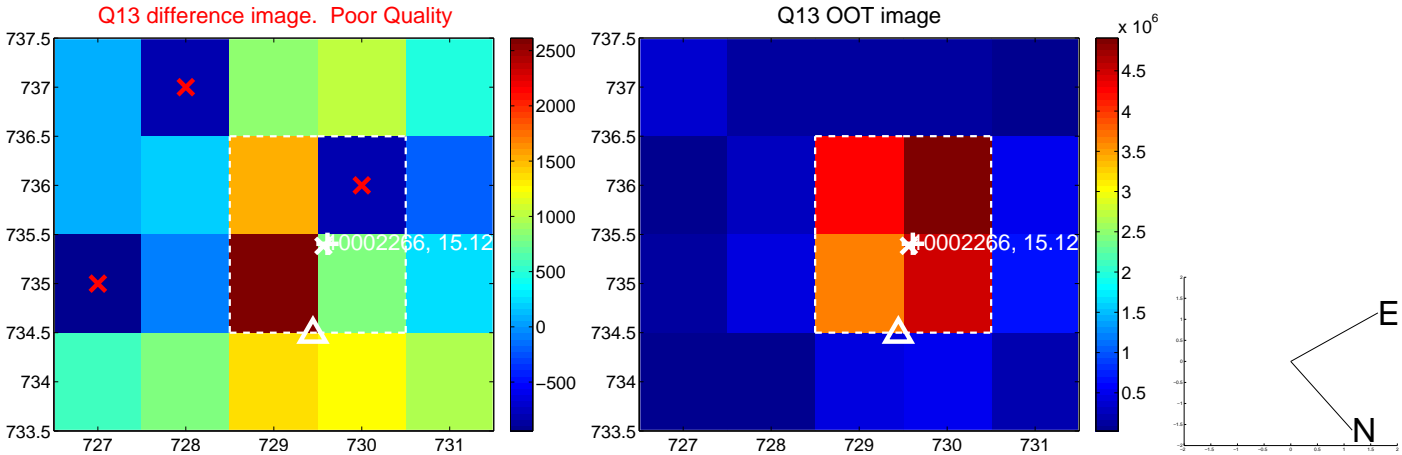
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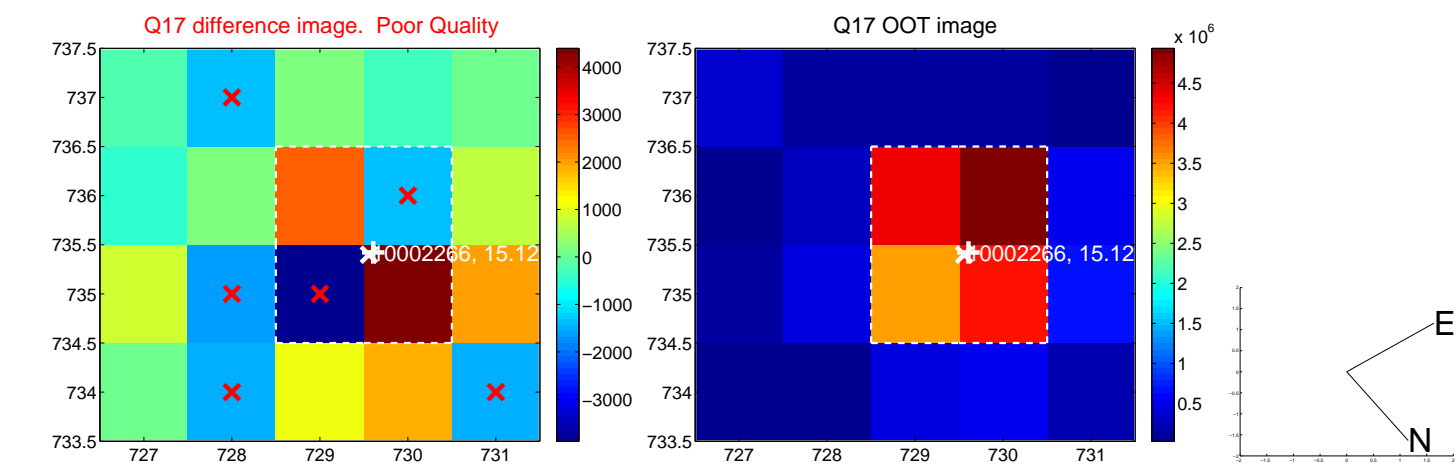
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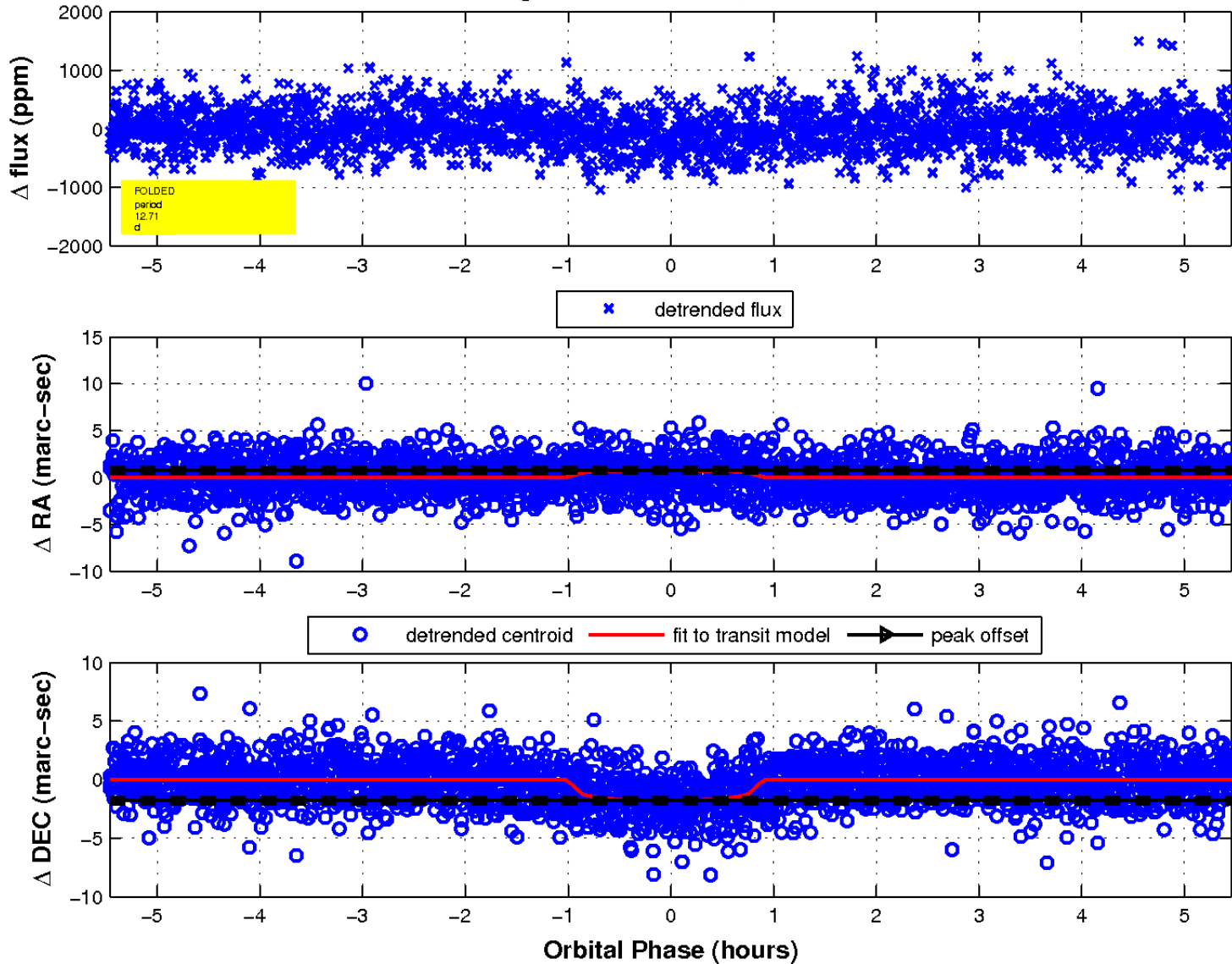
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fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

